

ISSUE REPORT

F as in Fat:

HOW OBESITY POLICIES ARE FAILING IN AMERICA

2006



 Trust for
America's Health
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NATIONAL PRIORITY.

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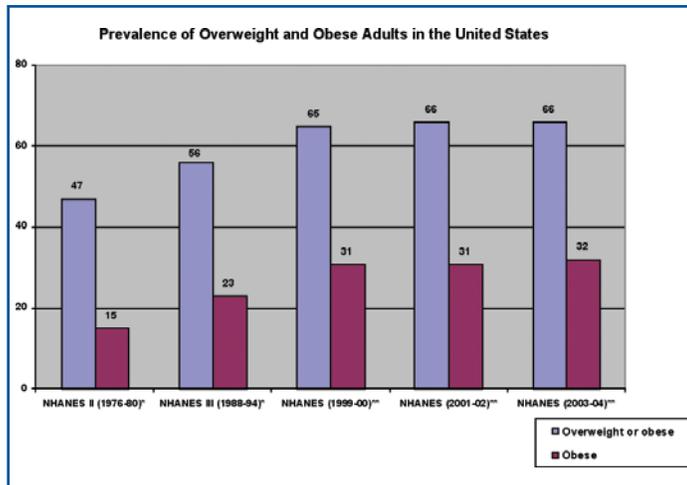
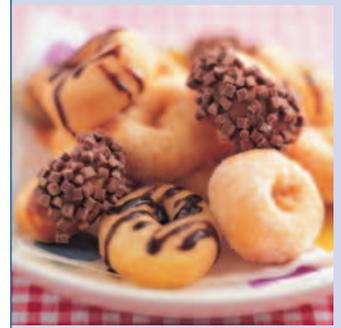
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Introduction

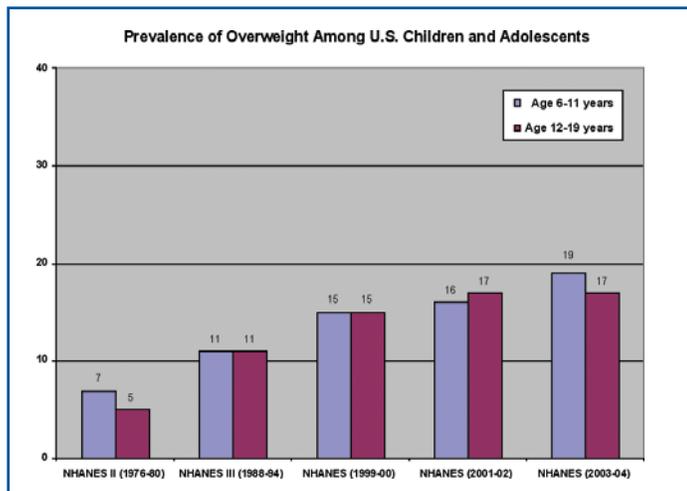
Nearly two-thirds of American adults are either overweight or obese.¹ Adult obesity rates have grown from 15 percent in 1980 to 32 percent in 2004.²



*Age-adjusted prevalence for adults age 20–74 years

**Prevalence for adults age 20 years and above

The childhood obesity rate more than doubled from 1980 to 2004, from 5 percent to 17 percent.³



WHAT'S THE BIG DEAL: WHY DO OBESITY AND OVERWEIGHT MATTER?

According to the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC), being overweight or obese increases an individual's risk for a range of serious diseases, includ-

ing type 2 diabetes, heart disease and stroke, and some form of cancers.⁴

The direct and indirect costs of obesity, including medical costs and lost worker pro-

ductivity, amount to more than \$117 billion each year, according to the U.S. Department of Health and Human Services (HHS).⁵

Because of the serious health consequences related to obesity, there is an urgent need to make practical decisions now to address the problem, based on common sense, the best prevailing research, and the advice of experts. This starts with addressing the contributing factors behind the real culprits – poor nutrition and inadequate physical activity.

According to the Federal Trade Commission (FTC), Americans spend nearly \$35 billion annually on weight-loss products and services.⁶ However, most diets have been shown to fail to result in long-term weight loss, and obesity

rates have continued to climb.⁷ Most obesity and overweight management efforts have focused on encouraging individuals to “eat less and move more.” However, people do not make decisions in a vacuum. There are numerous factors that influence how and what people eat and how much and what types of physical activity they get. Policies dealing with issues from sidewalks to school lunches impact the abilities of people and communities to make healthier choices. Individuals live in a world influenced by their relationships with family, friends, neighbors, and colleagues; their home, workplace, and school environments; their neighborhoods; their economic limitations; and their genetics, physiology, psychology, and life-stages.

NO STRATEGIC NATIONAL POLICY: WHY?

In response to the rise in obesity rates, a number of federal and state government efforts have been undertaken. Trust for America’s Health (TFAH) issued the first edition of this annual report in 2004 to examine federal and state obesity policies, including school lunch and physical education requirements, “snack taxes,” efforts to restrict obesity-related lawsuits, “smart growth” community design initiatives, and public health programs.⁸

These reports concluded that the country does not have a strategic policy to address obesity, despite the serious impact it has on the nation’s health and economy.

This year’s edition of the report reviews obesity rates and policies. It includes a survey of state chronic disease directors who oversee obesity and disease prevention strategies for states, a timeline of recent federal obesity policies and actions, and an overview of “intervention points” to help inform the development of future strategies. The report concludes with recommendations for how to break what has become a cycle of limited action and how, instead, to spark a concerted effort to help curb the obesity epidemic.

Section 1: Obesity and Overweight in the States

Section 2: Timeline of Key Obesity-Related Events

Section 3: Survey of Chronic Disease Directors

Section 4: Overview of “Intervention Points” for Obesity Strategies

Section 5: Recommendations

“FAT” FACTORS:

Many Issues Influence Individual Decisions About Nutrition and Physical Activity

Food Choices and Changes

- Higher caloric intake -- people eat 300 or more calories a day above what they ate in the 1980s⁹
- Higher caloric density of foods
- Limited access to supermarkets and nutritious, fresh foods in many urban and rural neighborhoods
- “Portion distortion,” or the rise of bigger portions
- “Value sizing,” or placing a higher value on cost for quantity versus quality of food
- Less in-home cooking and more frequent reliance on take-out food and eating in restaurants
- The proliferation of microwaves and faster, easier-to-prepare foods

Limited Time

- Long work hours
- Car time and commuting

Family and Home Influences

- The influence of other family members’ habits on eating and exercise patterns
- “Electronic culture” options for entertainment and free time, including TV, video games, and the Internet
- More people work outside the home or far from home

Children and Schools

- Nutritional standards for school breakfast and lunches currently focus on meeting minimum nutritional standards and keeping costs low
- Influx of soda, juice, snack machines, and fast food
- Reduction in the amount of physical education, recess, and recreation time
- Limited health education classes
- Lack of quality measures for physical education classes

Workplaces Not Conducive to Health

- Many desk jobs where activity is limited or not encouraged -- part of the sedentary lifestyle
- Worksites typically not designed to foster movement
- Limited opportunities for physical activity or recreation during the work day
- Unhealthy options in cafeterias or work lunch sites

Communities Not Designed for Physical Activity

- Communities are designed to foster driving rather than walking or biking
- Lack of public transit options
- Poor upkeep of sidewalk infrastructure
- Walking areas often unsafe or inconvenient
- Limited parks and recreation space, including indoor facilities
- Poor upkeep and security in local parks
- Weather conditions limit outdoor physical activity options and lack of affordable indoor physical activity options

Economic Constraints

- Health insurance coverage for obesity-preventive services is often limited or not available
- People without health insurance often do not receive either appropriate preventive services or post-condition treatments
- “Value sizing” of less nutritious foods, and the higher costs of many nutritious foods
- Expense of and taxes on gym memberships, exercise classes, equipment, facility use, and sports league fees
- Lower-income neighborhoods have fewer and smaller grocery stores and less access to fruits and vegetables

Genetics, Physiology, and Life-Stages

- Metabolism
- Childbearing
- Increased risk factors for obesity and related diseases in children with obese parents, particularly mothers
- Aging factors, such as menstruation, premenopause, and menopause for women

Psychology

- Greater advertising and marketing of less nutritious foods
- Body image concerns
- Marketing of “fad” diets
- Consumers’ frustration about conflicting nutrition information and advice
- Eating to combat stress
- Turning to eating as a replacement for smoking or other unhealthy behaviors

Obesity And Overweight in the States

In this section, TFAH examines each state’s current obesity and related health statistics.

Since last year, obesity rates have increased or stayed the same in every state and D.C. (comparing 2002-2004 data to 2003-2005 data).¹⁰

The rates increased in 31 states and stayed the same in 18 states and D.C. (using a statistically significant P<0.05 standard. Hawaii was excluded because 2004 data are not available for the state.)

(For more information on the methodology of the rankings, please see Appendix A; for

more information on the comparisons, please see Appendix C.)

HHS set a national goal aiming to reduce levels of obesity in adults to 15 percent or less in every state by the year 2010. Instead, obesity rates have continued to climb, and adult obesity rates exceed 16.5 percent in every state (based on three-year aggregation of data). The rates actually exceed 20 percent in 43 states and D.C.

THE BIGGEST BELT: The American South

The percentage of obese adults exceeds 25 percent in 13 states -- an increase of three more states since last year.

Rank	State	Percentage Adult Obesity Three-Year Combined Data (2003-2005) Including Confidence Intervals
1	Mississippi	29.5% (+/- 0.9)
2	Alabama	28.7% (+/- 1.1)
3	West Virginia	28.6% (+/- 1.0)
4	Louisiana	27.4% (+/- 0.9)
5	Kentucky	26.7% (+/- 1.0)
6	Tennessee	26.6% (+/- 1.1)
7	Arkansas	26.4% (+/- 0.9)
8 (Tied)	Indiana	26.2% (+/- 0.8)
8 (Tied)	South Carolina	26.2% (+/- 0.7)
10	Texas	25.8% (+/- 0.8)

The Least Obese States

Colorado had the lowest percentage of obese adults -- 16.9 percent, based on combining three years of data. The other states with the lowest rates were in the Northeast and the Western states.

Rank	Stat	Percentage Adult Obesity Three-Year Combined Data (2003-2005) Including Confidence Intervals
51	Colorado	16.9% (+/- 0.7)
50	Hawaii	18.2% (+/- 1.0)
49	Massachusetts	18.6% (+/- 0.7)
48	Rhode Island	19.5% (+/- 0.9)
47	Vermont	19.5% (+/- 0.7)
46	Connecticut	19.6% (+/- 0.8)
45	Montana	19.9% (+/- 0.9)
44	Arizona	20.8% (+/- 1.3)
43	Utah	20.8% (+/- 0.9)
42	Nevada	21.0% (+/- 1.3)

Percentage of Overweight and Obese Adults in States

The percentage of adults who are obese or overweight exceeds 60 percent in 28 states (based on combining three years of data).

Mississippi has the highest combined level of obese plus overweight adults at 67.3 percent.



CHART ON OBESITY AND

ADULTS									
States	Obesity				Overweight and Obesity			2005 Percentage (95% Conf Interval)	
	2005 Percentage (95% Conf Interval)	2003-2005 3-Yr. Data Percentage (95% Conf Interval)	Ranking (Based on 3-Yr. Data)	Percentage Point Change 2002-2004 to 2003-2005	2005 Percentage (95% Conf Interval)	2003-2005 3-Yr. Data Percentage (95% Conf Interval)	Ranking (Based on 3-Yr. Data)		
Alabama	28.9% (+/- 2.1)	28.7% (+/- 1.1)	2	1.1	64.5% (+/- 2.2)	64.1% (+/- 1.2)	2	9.8% (+/- 1.1)	
Alaska	27.5% (+/- 2.5)	24.9% (+/- 1.4)	15	1.4	64.2% (+/- 2.7)	62.7% (+/- 1.6)	8	4.4% (+/- 1.0)	
Arizona	21.1% (+/- 2.3)	20.8% (+/- 1.3)	43	0.5	56.1% (+/- 2.9)	56.4% (+/- 1.6)	44	7.5% (+/- 1.3)	
Arkansas	28.0% (+/- 1.5)	26.4% (+/- 0.9)	7	1.4	64.7% (+/- 1.7)	63.1% (+/- 1.0)	6	8.1% (+/- 0.8)	
California	22.7% (+/- 1.4)	22.7% (+/- 0.9)	30	1.1	60.0% (+/- 1.6)	60.0% (+/- 1.0)	28	7.1% (+/- 0.9)	
Colorado	17.8% (+/- 1.2)	16.9% (+/- 0.7)	51	0.5	54.5% (+/- 1.5)	53.0% (+/- 1.0)	50	4.8% (+/- 0.6)	
Connecticut	20.1% (+/- 1.4)	19.6% (+/- 0.8)	46	0.7	58.1% (+/- 1.9)	56.4% (+/- 1.0)	44	6.5% (+/- 0.8)	
Delaware	23.5% (+/- 1.8)	22.8% (+/- 1.0)	29	0.3	62.9% (+/- 2.1)	61.0% (+/- 1.2)	22	8.6% (+/- 1.1)	
District of Columbia	21.7% (+/- 1.9)	21.5% (+/- 1.2)	39	0.3	55.0% (+/- 2.2)	54.2% (+/- 1.4)	49	7.1% (+/- 1.0)	
Florida	22.8% (+/- 1.4)	21.8% (+/- 0.9)	35	1.1	60.7% (+/- 1.6)	59.7% (+/- 1.1)	29	8.8% (+/- 0.9)	
Georgia	26.5% (+/- 1.7)	25.5% (+/- 0.9)	12	1.0	63.0% (+/- 1.9)	61.0% (+/- 1.1)	22	8.3% (+/- 0.9)	
Hawaii	19.7% (+/- 1.4)	18.2% (+/- 1.0)	50	N/A	53.0% (+/- 1.7)	51.6% (+/- 1.3)	51	7.3% (+/- 0.9)	
Idaho	24.5% (+/- 1.5)	22.4% (+/- 0.8)	31	1.4	61.4% (+/- 1.8)	59.5% (+/- 1.0)	33	6.8% (+/- 0.7)	
Illinois	25.0% (+/- 1.5)	23.9% (+/- 0.9)	23	1.0	60.8% (+/- 1.8)	60.5% (+/- 1.0)	27	7.9% (+/- 0.9)	
Indiana	27.2% (+/- 1.4)	26.2% (+/- 0.8)	8	1.0	62.4% (+/- 1.6)	62.1% (+/- 0.9)	11	8.3% (+/- 0.8)	
Iowa	25.4% (+/- 1.5)	24.3% (+/- 0.8)	21	0.9	62.5% (+/- 1.7)	61.7% (+/- 1.0)	14	6.8% (+/- 0.7)	
Kansas	23.9% (+/- 1.1)	23.2% (+/- 0.7)	26	0.3	60.8% (+/- 1.4)	60.7% (+/- 0.8)	24	6.9% (+/- 0.6)	
Kentucky	28.6% (+/- 1.6)	26.7% (+/- 1.0)	5	1.3	64.8% (+/- 1.8)	63.8% (+/- 1.1)	3	8.9% (+/- 0.9)	
Louisiana	30.8% (+/- 2.0)	27.4% (+/- 0.9)	4	1.6	64.7% (+/- 2.2)	62.7% (+/- 1.0)	8	9.2% (+/- 1.1)	
Maine	22.7% (+/- 1.6)	22.0% (+/- 1.0)	34	0.6	59.6% (+/- 1.9)	59.6% (+/- 1.2)	30	7.5% (+/- 0.9)	
Maryland	24.4% (+/- 1.2)	23.4% (+/- 0.9)	24	1.7	61.1% (+/- 1.4)	59.6% (+/- 1.0)	30	7.2% (+/- 0.6)	
Massachusetts	20.7% (+/- 1.2)	18.6% (+/- 0.7)	49	0.8	56.1% (+/- 1.5)	54.5% (+/- 0.9)	48	6.4% (+/- 0.6)	
Michigan	26.2% (+/- 1.0)	25.6% (+/- 0.8)	11	0.3	62.5% (+/- 1.1)	61.7% (+/- 0.9)	14	8.1% (+/- 0.5)	
Minnesota	23.7% (+/- 1.9)	23.1% (+/- 0.9)	27	0.5	60.9% (+/- 2.3)	60.7% (+/- 1.1)	24	5.8% (+/- 0.9)	
Mississippi	30.9% (+/- 1.8)	29.5% (+/- 0.9)	1	1.3	67.3% (+/- 1.8)	65.9% (+/- 1.0)	1	9.8% (+/- 0.9)	
Missouri	26.9% (+/- 1.8)	25.2% (+/- 1.0)	14	1.3	63.9% (+/- 2.1)	61.6% (+/- 1.2)	17	7.6% (+/- 0.9)	
Montana	21.3% (+/- 1.5)	19.9% (+/- 0.9)	45	0.8	57.5% (+/- 2.0)	57.1% (+/- 1.2)	43	5.7% (+/- 0.7)	
Nebraska	26.0% (+/- 1.3)	24.4% (+/- 0.8)	20	1.0	63.2% (+/- 1.5)	62.0% (+/- 0.9)	12	7.3% (+/- 0.7)	
Nevada	20.7% (+/- 2.2)	21.0% (+/- 1.3)	42	-0.3**	58.8% (+/- 2.7)	59.1% (+/- 1.6)	34	7.2% (+/- 1.3)	
New Hampshire	23.1% (+/- 1.3)	21.7% (+/- 0.8)	36	1.8	60.0% (+/- 1.6)	58.2% (+/- 0.9)	40	6.5% (+/- 0.7)	
New Jersey	22.1% (+/- 1.0)	21.4% (+/- 0.5)	40	1.1	59.2% (+/- 1.2)	58.7% (+/- 0.7)	38	7.7% (+/- 0.6)	
New Mexico	21.8% (+/- 1.4)	21.2% (+/- 0.8)	41	0.7	60.4% (+/- 1.8)	58.4% (+/- 1.0)	39	7.3% (+/- 0.8)	
New York	22.2% (+/- 1.2)	21.7% (+/- 0.7)	36	0.5	59.8% (+/- 1.5)	57.9% (+/- 0.9)	41	8.1% (+/- 0.8)	
North Carolina	25.9% (+/- 0.9)	24.7% (+/- 0.6)	17	0.8	62.7% (+/- 1.0)	61.7% (+/- 0.7)	14	8.5% (+/- 0.5)	
North Dakota	25.4% (+/- 1.6)	24.6% (+/- 1.0)	18	0.7	64.1% (+/- 1.9)	63.3% (+/- 1.2)	5	6.7% (+/- 0.9)	
Ohio	24.5% (+/- 1.7)	24.9% (+/- 1.1)	15	0.5	62.4% (+/- 1.9)	61.4% (+/- 1.2)	20	7.9% (+/- 0.9)	
Oklahoma	26.9% (+/- 1.3)	25.4% (+/- 0.7)	13	1.4	62.9% (+/- 1.5)	61.5% (+/- 0.8)	19	9.0% (+/- 0.7)	
Oregon	23.8% (+/- 0.9)	22.2% (+/- 0.7)	33	1.2	59.7% (+/- 1.1)	59.0% (+/- 0.9)	35	6.7% (+/- 0.5)	
Pennsylvania	25.3% (+/- 1.2)	24.5% (+/- 0.8)	19	0.5	61.9% (+/- 1.3)	61.1% (+/- 0.9)	21	8.1% (+/- 0.6)	
Rhode Island	21.0% (+/- 1.6)	19.5% (+/- 0.9)	47	0.9	59.3% (+/- 2.0)	57.4% (+/- 1.1)	42	6.4% (+/- 0.8)	
South Carolina	29.1% (+/- 1.2)	26.2% (+/- 0.7)	8	1.1	64.5% (+/- 1.3)	62.0% (+/- 0.8)	12	10.3% (+/- 0.7)	
South Dakota	25.5% (+/- 1.4)	24.0% (+/- 0.8)	22	1.4	62.8% (+/- 1.6)	61.6% (+/- 0.9)	17	6.4% (+/- 0.6)	
Tennessee	27.4% (+/- 2.0)	26.6% (+/- 1.1)	6	1.0	62.3% (+/- 2.2)	62.3% (+/- 1.3)	10	9.1% (+/- 1.0)	
Texas	27.0% (+/- 1.5)	25.8% (+/- 0.8)	10	0.5	64.1% (+/- 1.6)	62.9% (+/- 0.9)	7	7.9% (+/- 0.7)	
Utah	21.2% (+/- 1.5)	20.8% (+/- 0.9)	43	1.2	56.2% (+/- 1.8)	55.8% (+/- 1.1)	46	5.5% (+/- 0.7)	
Vermont	20.2% (+/- 1.1)	19.5% (+/- 0.7)	47	0.4	55.8% (+/- 1.5)	55.2% (+/- 0.9)	47	6.0% (+/- 0.6)	
Virginia	25.1% (+/- 1.6)	23.3% (+/- 0.9)	25	0.5	61.2% (+/- 2.0)	59.6% (+/- 1.1)	30	6.9% (+/- 0.8)	
Washington	23.3% (+/- 0.7)	22.4% (+/- 0.4)	31	0.7	59.4% (+/- 0.9)	58.8% (+/- 0.5)	36	6.3% (+/- 0.4)	
West Virginia	30.6% (+/- 1.8)	28.6% (+/- 1.0)	3	1.0	65.4% (+/- 1.9)	63.7% (+/- 1.1)	4	10.4% (+/- 1.1)	
Wisconsin	24.4% (+/- 1.5)	22.9% (+/- 0.9)	28	1.0	61.5% (+/- 1.9)	60.6% (+/- 1.1)	26	6.6% (+/- 0.8)	
Wyoming	24.2% (+/- 1.4)	21.7% (+/- 0.8)	36	1.6	61.6% (+/- 1.6)	58.8% (+/- 1.0)	36	6.5% (+/- 0.7)	

The 2005 BRFSS percentages are included in the chart as they appear on CDC's BRFSS Web site. To "stabilize" the data in order to rank the states, TFAH combined three years of data. (See Appendix A for more information on the methodology used for the rankings.)

Hawaii was excluded from year to year change comparisons because 2004 data are not available for the state.

OVERWEIGHT IN THE STATES

					CHILDREN	
Diabetes		Hypertension			Overweight High School Students 2005 YRBS 2005 Percentage (95% Conf Interval)	Overweight Low-Income Children Ages 2-5 PedNSS 2004 Percentage
2003-2005 3-Yr. Data Percentage (95% Conf Interval)	Ranking (Based on 3-Yr. Data)	2005 Percentage (95% Conf Interval)	2001-2005 3-Yr. Data Percentage*** (95% Conf Interval)	Ranking (Based on 3-Yr. Data)		
8.9% (+/- 0.6)	5	31.2% (+/- 1.9)	32.0% (+/- 1.1)	3	14.8% (+/- 1.7)	14.7%
4.5% (+/- 0.6)	51	21.5% (+/- 2.1)	21.4% (+/- 1.2)	48	N/A	N/A
6.8% (+/- 0.7)	29	22.3% (+/- 1.9)	22.9% (+/- 1.1)	44	11.9% (+/- 2.0)	12.4%
7.5% (+/- 0.5)	20	29.0% (+/- 1.4)	29.8% (+/- 0.9)	5	15.4% (+/- 1.9)	12.7%
7.1% (+/- 0.5)	25	25.7% (+/- 1.4)	24.1% (+/- 0.8)	33	N/A	17.5%
4.6% (+/- 0.4)	50	20.1% (+/- 1.1)	20.5% (+/- 0.9)	50	9.8% (+/- 2.8)	9.6%
6.2% (+/- 0.4)	40	23.8% (+/- 1.4)	24.0% (+/- 0.7)	35	11.2% (+/- 2.4)	N/A
7.7% (+/- 0.6)	18	28.0% (+/- 1.8)	27.7% (+/- 1.0)	12	14.1% (+/- 1.4)	N/A
7.9% (+/- 0.7)	13	27.1% (+/- 1.9)	27.1% (+/- 1.3)	15	10.6% (+/- 1.5)	15.0%
8.4% (+/- 0.5)	7	27.7% (+/- 1.3)	28.0% (+/- 0.9)	11	10.9% (+/- 1.0)	13.8%
7.8% (+/- 0.5)	17	26.5% (+/- 1.5)	27.1% (+/- 0.9)	15	12.4% (+/- 2.1)	13.0%
7.5% (+/- 0.7)	20	24.2% (+/- 1.4)	23.8% (+/- 0.9)	37	13.5% (+/- 1.9)	10.0%
6.4% (+/- 0.4)	39	23.6% (+/- 1.3)	23.8% (+/- 0.8)	37	7.2% (+/- 1.6)	11.4%
7.1% (+/- 0.5)	25	25.5% (+/- 1.4)	24.8% (+/- 0.9)	27	N/A	14.3%
7.9% (+/- 0.4)	13	26.2% (+/- 1.3)	26.3% (+/- 0.8)	20	15.0% (+/- 2.5)	14.1%
6.7% (+/- 0.4)	31	24.5% (+/- 1.3)	25.0% (+/- 0.8)	26	12.2% (+/- 2.8)	14.6%
6.5% (+/- 0.4)	36	24.2% (+/- 1.0)	23.8% (+/- 0.7)	37	11.9% (+/- 2.0)	13.6%
8.3% (+/- 0.5)	8	28.2% (+/- 1.5)	29.4% (+/- 0.9)	7	15.6% (+/- 1.5)	17.6%
8.6% (+/- 0.5)	6	29.4% (+/- 1.9)	28.6% (+/- 0.9)	9	N/A	14.0%
7.5% (+/- 0.6)	20	25.6% (+/- 1.5)	25.6% (+/- 1.0)	24	10.9% (+/- 1.7)	15.5%
7.1% (+/- 0.5)	25	26.0% (+/- 1.2)	25.8% (+/- 0.8)	21	12.6% (+/- 2.1)	14.5%
6.0% (+/- 0.4)	45	24.8% (+/- 1.2)	23.8% (+/- 0.7)	37	11.2% (+/- 2.0)	N/A
7.9% (+/- 0.4)	13	27.8% (+/- 0.9)	27.3% (+/- 0.8)	13	12.1% (+/- 2.2)	13.2%
5.5% (+/- 0.4)	48	21.9% (+/- 1.6)	22.1% (+/- 0.9)	47	N/A	13.8%
10.1% (+/- 0.5)	2	33.3% (+/- 1.7)	32.7% (+/- 1.0)	1	N/A	N/A
7.3% (+/- 0.5)	23	27.3% (+/- 1.7)	27.1% (+/- 1.0)	15	13.9% (+/- 2.4)	13.8%
5.7% (+/- 0.5)	46	24.0% (+/- 1.5)	24.0% (+/- 1.0)	35	9.3% (+/- 1.3)	12.0%
6.7% (+/- 0.4)	31	24.5% (+/- 1.2)	23.6% (+/- 0.8)	42	11.0% (+/- 1.2)	13.6%
6.7% (+/- 0.7)	31	24.3% (+/- 2.2)	24.6% (+/- 1.4)	30	N/A	14.3%
6.2% (+/- 0.4)	40	23.3% (+/- 1.2)	22.9% (+/- 0.8)	44	11.4% (+/- 2.2)	16.3%
7.2% (+/- 0.3)	24	25.4% (+/- 1.0)	25.7% (+/- 0.6)	22	11.4% (+/- 2.7)	17.7%
6.6% (+/- 0.4)	35	22.9% (+/- 1.3)	21.4% (+/- 0.8)	48	12.0% (+/- 2.2)	N/A
7.7% (+/- 0.5)	18	25.5% (+/- 1.2)	25.6% (+/- 0.8)	24	10.5% (+/- 1.4)	16.6
8.3% (+/- 0.3)	8	29.2% (+/- 0.9)	28.4% (+/- 0.8)	10	13.5% (+/- 2.5)	14.9%
6.2% (+/- 0.5)	40	23.3% (+/- 1.4)	23.8% (+/- 0.9)	37	11.2% (+/- 2.4)	12.7%
8.2% (+/- 0.6)	10	27.2% (+/- 1.6)	26.7% (+/- 1.0)	19	12.7% (+/- 2.7)	12.0%
8.1% (+/- 0.4)	11	29.9% (+/- 1.2)	28.8% (+/- 0.8)	8	15.2% (+/- 2.0)	N/A
6.5% (+/- 0.4)	36	23.6% (+/- 0.8)	24.2% (+/- 0.8)	32	N/A	N/A
8.0% (+/- 0.5)	12	27.2% (+/- 1.1)	27.3% (+/- 0.8)	13	N/A	11.8%
6.8% (+/- 0.5)	29	26.3% (+/- 1.6)	26.9% (+/- 0.9)	18	12.9% (+/- 1.7)	N/A
9.3% (+/- 0.4)	3	31.4% (+/- 1.2)	29.7% (+/- 0.8)	6	12.7% (+/- 2.9)	13.1%
6.7% (+/- 0.4)	31	25.1% (+/- 1.2)	24.7% (+/- 0.7)	29	10.4% (+/- 2.1)	13.9%
9.0% (+/- 0.6)	4	30.2% (+/- 1.8)	29.9% (+/- 1.1)	4	14.6% (+/- 2.6)	12.6%
7.9% (+/- 0.4)	13	24.3% (+/- 1.2)	24.8% (+/- 0.7)	27	13.9% (+/- 1.6)	15.2%
5.4% (+/- 0.4)	49	18.5% (+/- 1.2)	19.8% (+/- 0.9)	51	5.6% (+/- 1.7)	8.5%
5.7% (+/- 0.4)	46	23.7% (+/- 1.1)	22.8% (+/- 0.7)	46	9.5% (+/- 2.1)	13.7%
7.0% (+/- 0.5)	28	26.8% (+/- 1.6)	25.7% (+/- 0.9)	22	N/A	17.3%
6.5% (+/- 0.2)	36	24.1% (+/- 0.7)	24.1% (+/- 0.6)	33	N/A	N/A
10.4% (+/- 0.6)	1	31.4% (+/- 1.7)	32.5% (+/- 1.0)	2	14.5% (+/- 2.2)	12.6
6.1% (+/- 0.5)	43	25.1% (+/- 1.4)	24.5% (+/- 0.9)	31	9.9% (+/- 1.6)	13.3%
6.1% (+/- 0.4)	43	23.3% (+/- 1.3)	23.2% (+/- 0.8)	43	8.4% (+/- 1.1)	10.1%

Source: CDC data.

*Red denotes a statistically significant change (P<0.05) from 2002-2004 to 2003-2005.

**Nevada's decrease is not statistically significant.

***Hypertension data is only collected every two years. See methodology overview for more details.

NATIONAL VERSUS STATE DATA: TWO DIFFERENT SURVEYS

The CDC conducts two separate information surveys for health statistics.

The **National Health and Nutrition Examination Survey (NHANES)** is designed to study national trends and data.

The **Behavioral Risk Factor Surveillance System (BRFSS)** studies trends and data in each state.

The two studies collect information in different ways and, therefore, have different results. The BRFSS numbers are usually lower, because the survey design is based on “self-reported” information, whereas the NHANES data are collected through in-person interviews and physician examinations. The national number typically cited for adult obesity rates is 32 percent, based on the NHANES data. This number is higher than the estimated percentage for many states, which use the BRFSS data.

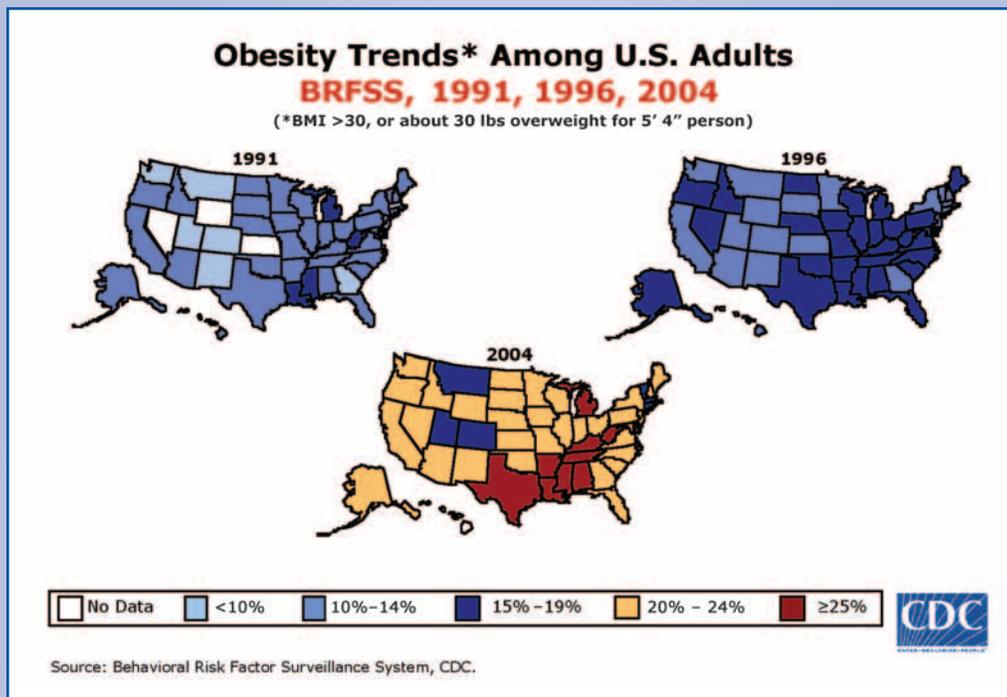
- **NHANES** is a nationally representative survey through which data are collected via in-person interviews and examinations by physicians.¹¹ There were 4,431 records for BMI information included in the 2003-2004 NHANES data. Because height and weight are measured, rather than self-reported, NHANES is often referred to as the “gold standard.”
- **BRFSS** is based on state rather than national data, and consists of a telephone survey through which respondents self-report their height, weight and other health information. It is the only source for state-by-state obesity information. According to CDC, BRFSS is the largest telephone survey in the world. In 2005, BRFSS consisted of 350,000 interviews (averaging more than 4,000 interviews per state) and generated confidence intervals of less than plus or minus 3 percent.¹² Because data show that women are more likely to report that they weigh less than they do while men are more likely to say that they are taller than they are, it is commonly believed that the BRFSS underreports obesity.¹³ This belief is reinforced by the fact that NHANES data show obesity rates to be higher than the data reported by BRFSS. This does not, however, negate BRFSS’ importance as a source for information about health trends and patterns. (For additional information on the “underreporting” of obesity in BRFSS, please see Appendix B). Due to underreporting of weight and over reporting of height on the BRFSS, the actual state-specific trends in obesity are likely to be higher than in this report.

If BRFSS underreports obesity, why use it?

Despite its limitations, BRFSS is currently the best available source of data on health trends in states. It is the only data source that currently collects state-by-state health information on a regular basis. It is a taxpayer-supported CDC program and is the primary ongoing source for health information in the United States.

The CDC provides information from BRFSS to policymakers, including Congress and state officials, and to the public. BRFSS data are then used to inform decisions about health policies, funding, and activities. The CDC presents this data routinely through charts, its Web site, and trend maps. These data, available to public health practitioners, policymakers, and the public through CDC’s Web site and other public-facing materials, provide the opportunity to review trends and patterns. CDC’s maps that demonstrate the rising trends of obesity are based on annual state averages. They do not include or account for confidence intervals or annual variation in states. Additional information about the data, including sample sizes, confidence intervals, limitations, and data quality, is available on the CDC’s Web site at: http://www.cdc.gov/brfss/technical_infodata/2004QualityReport.htm

An example of the CDC's use of the data includes the following trend maps, which show patterns based on the BRFSS data for each state (and, as noted above, does not account for confidence intervals).



The above map from the CDC's "U.S. Obesity Trends 1985-2004" is available at: <http://www.cdc.gov/nccdphp/dnpa/obesity/trend/maps/>.¹⁴

Why Rank States?

TFAH provides state rankings to better inform policymakers and the public about obesity trends in the United States. This information allows people to gain a better understanding of patterns in rising obesity rates. And, notwithstanding the fact that obesity is a national problem, state rankings help demonstrate the varying levels of concern and activity to address obesity in different areas of the country.

Due to annual variations in the data, based on advice received from policy officials at the CDC, TFAH "stabilizes" the data by combining three years. This is similar to how the NHANES data combines three-years of data in order to "stabilize" any anomalies. (For examples of how data were "stabilized" in states, please see Appendix A).

HOW ARE OBESITY AND OVERWEIGHT DETERMINED?

Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.¹⁵ Overweight refers to increased body weight in relation to height, which is then compared to a standard of acceptable weight.¹⁶ Body mass index, or BMI, is a common measure expressing the relationship (or ratio) of weight-to-height:

$$\text{BMI} = \frac{(\text{Weight in pounds})}{(\text{Height in inches}) \times (\text{Height in inches})} \times 703$$

Adults with a BMI of 25 to 29.9 are considered overweight, while those with a BMI of 30 or more are considered obese.¹⁷

A number of researchers consider measures of BMI to be useful for examining trends and patterns of overweight and obesity. However, an assessment of an individual's health should include consideration of other factors beyond BMI, such as waist size, waist-to-hip ratio, blood pressure, cholesterol level, and blood sugar.¹⁸

There are some issues surrounding the use of BMI as the primary measure for obesity. These include:

- BMI does not distinguish between fat and muscle. Individuals with a significant amount of lean muscle will have higher BMIs, even though they do not have an unhealthy level of fat.
- Other research has shown that individuals of African and/or Polynesian ancestry may have “less body fat and more lean muscle mass,” suggesting that these groups should have higher baseline BMIs from which to determine overweight and obesity.¹⁹
- Finally, a June 2005 study found that current BMI thresholds “significantly underestimate health risks in many non-Europeans.”²⁰ Despite “healthy” BMIs, some Asian and Aboriginal groups have a high risk of “weight-related health problems.”²¹ Several years ago, it was suggested to the World Health Organization (WHO) that BMI levels for Asians be dropped to 23 and 25 for overweight and obesity, respectively, but no such changes occurred.

For Pediatric Nutrition Surveillance System (PedNSS), which monitors the nutritional status of low-income infants, children, and women in federally funded maternal and child health programs, children ages two years or older are considered “overweight” if their BMI-for-age is greater than the 95th percentile compared to other children of that age.

For Youth Behavior Risks Surveillance (YBRS), which monitors priority health-risk behaviors among youth and young adults, CDC defines “overweight” high school students as those whose BMI-for-age is greater than or equal to the 95th percentile of others in that age range.

PSYCHOSOCIAL AND HEALTH CONSEQUENCES OF OBESITY IN CHILDHOOD AND ADOLESCENCE

A number of studies have documented how obese children typically become obese adults. Research also shows that obesity increases a child's risk for a number of health problems, including type 2 diabetes, increased cholesterol levels, hypertension, and the danger of eating disorders among obese adolescents.²² Being overweight as a child may lead to orthopedic ailments and premature onset of menstruation.²³ Some studies show that obesity and overweight in children also negatively impact children's mental health and school performance.²⁴ Overweight children have been found to engage in other unhealthy behaviors and tend to exhibit loneliness and nervousness.²⁵

The studies also emphasize that obesity and overweight in childhood and adolescence are often a path toward increased risk for and further development of a range of obesity-related diseases as children enter adulthood, leading to a lifetime of health problems.

HEALTH IMPACT OF OBESITY

Below are key findings of research on the impact of obesity on health:

■ Type 2 Diabetes

- ▲ More than 80 percent of people with type 2 diabetes are overweight.²⁶
- ▲ More than 20 million adult Americans have diabetes.²⁷
- ▲ Another 54 million Americans are “pre-diabetic,” which means they have prolonged or uncontrolled elevated blood sugar levels that can contribute to the development of diabetes.²⁸
- ▲ Diabetes is the sixth leading cause of death in the U.S. and accounts for 11 percent of all U.S. health care costs.²⁹
- ▲ CDC projects that 48.3 million Americans will have diabetes by 2050.³⁰

■ Heart Disease and Stroke

- ▲ People who are overweight are more likely to suffer from high blood pressure, high levels of blood fats, and LDL cholesterol (“a fat-like substance”) -- all risk factors for heart disease and stroke.³¹
- ▲ Heart disease is the leading cause of death in the United States, and stroke is the third leading cause.³²
- ▲ One in four Americans has some form of cardiovascular disease.³³
- ▲ Heart disease can lead to a heart attack, congestive heart failure, sudden cardiac death, angina (chest pain), or abnormal heart rhythm.³⁴
- ▲ A stroke limits blood and oxygen to the brain and can cause paralysis or death.³⁵

■ Cancer

- ▲ People who are overweight “may increase the risk of developing several types of cancer, including cancers of the colon, esophagus, and kidney. Overweight is also linked with uterine and postmenopausal breast cancer in women.”³⁶
- ▲ Approximately 20 percent of cancer in women and 15 percent of cancer in men is attributable to obesity.³⁷
- ▲ Cancer is the second leading cause of death in the United States.

- ▲ It is unknown why being overweight can increase cancer risk. One theory is that fat cells may affect overall cell growth in a person’s body.³⁸

■ Unhealthier Earlier in Life

- ▲ Research has found younger adults who are obese may face greater health risks earlier in life. For instance, a 2005 study found that women who were obese at age 30 were more likely to die at a younger age and significantly more likely to develop cancer.³⁹
- ▲ Some research suggests obesity in middle age may put individuals at higher risk for developing dementia later in life.⁴⁰

■ Medical Care Complications

- ▲ Besides the traditional health risks associated with obesity, obese individuals have been found to receive less preventive care, even though they often need medical care the most.⁴¹ This is known as the “inverse care law.” Obese individuals have more physician visits, receive more prescriptions, and incur greater health care costs, but still are not receiving key clinical preventive services. This discrepancy may occur because addressing the multiple health problems associated with obesity is time-consuming, leaving less time to focus on preventive care.⁴²

■ Additional Health Care Costs

- ▲ A 2005 study estimates 27 percent of U.S. health care costs are related to physical inactivity, overweight, and obesity.⁴³
- ▲ A study shows that annual expenditures for obese Medicare patients are 15 percent higher than for normal-weight or overweight patients.⁴⁴
- ▲ A 2002 study from the Agency for Healthcare Research and Quality determined that obese individuals age 55 and older have higher annual medical care expenses than normal-weight and overweight individuals (\$7,235 for obese, \$5,478 for overweight, and \$5,390 for normal-weight persons).⁴⁵

PHYSICAL ACTIVITY, HEALTH, AND COSTS

According to a report by the surgeon general in 1996, “regular physical activity that is performed on most days of the week reduces the risk of developing or dying from some of the leading causes of illness and death in the United States.”⁴⁶

- Physical activity reduces the risk of dying prematurely from heart disease and developing diabetes, high blood pressure, and colon cancer. It also reduces already high blood pressure; helps control weight; builds and maintains healthy bones, muscles, and joints; helps older adults become stronger and better able to move about without falling; and promotes psychological well-being.

A 2004 article in Critical Pathways in Cardiology cited research that found “of all U.S. deaths from major chronic disease, 23 percent are linked to sedentary lifestyles,” and that “sedentary lifestyles increase all-cause mortality and double the risk of cardiovascular disease, obesity, and type 2 diabetes.”⁴⁷ This article also found that:

- \$5.6 billion in heart disease costs could be saved if one-tenth of Americans began a regular walking program; and
- Sedentary Americans spend approximately \$330 more in direct health care costs annually than active Americans (1987 dollars).⁴⁸

Another 2004 study found there were 9.2 million cases of cardiovascular disease resulting in \$23.7 billion in direct medical expenditures associated with inactivity in 2001.⁴⁹



DISPARITIES AND OBESITY⁵⁰

Prevalence of Obesity in Caucasian Women Compared with African-American Women

	Caucasian Women (%)	African-American Women (%)
1988-1994	22.9	38.3
1999-2002	30.7	48.8

Prevalence of Obesity in Non-Poor Adults Compared with Low-Income* Adults

	Non-Low-Income Adults (%)	Low-Income Adults (%)
1999-2002	28.7	34.7

* Low-income adults are individuals below the poverty threshold. The U.S. Census Bureau uses “a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family’s total income is less than the family’s threshold, then that family and every individual in it is considered in poverty.”⁵¹ Poverty thresholds are computed annually by the U.S. Census Bureau. For example in 2004, the poverty threshold for a family of four -- two children under 18 years old and their mother and father -- was \$19,157. Therefore, a family of four earning less than \$19,157 in 2004 would be considered “in poverty.”

Prevalence of Overweight Rates for Female Caucasian Children and Adolescents (Ages 6 to 19) Compared with African-American Children and Adolescents

	Caucasians (%)	African-Americans (%)
1999-2002, Girls Ages 6 to 11	13.1	22.8
1999-2002, Girls Ages 12 to 19	12.7	23.6

Data Source: NHANES

RISING RATES OF CHILDHOOD OBESITY: KIDS AND CAR SEATS

An April 2006 *Pediatrics* article, “Tipping the Scales: Obese Children and Child Safety Seats,” found that, based on NHANES data, 285,305 children ages 6 and younger would have a difficult time fitting into most child safety seats due to their overweight status.⁵² More than half of these children are age 3 and weigh more than 40 pounds. The researchers found only four car seats on the market that could both accommodate these children and keep them safe. Those seats cost between \$240 and \$270.



Some Key Events in Obesity

SECTION 2

The following is a timeline of many of the major governmental and non-governmental national-level activities or advances related to obesity in the past half-century. (More comprehensive reviews of the varied federal programs are available in TFAH's 2004 and 2005 versions of "F as in Fat." Both are available at www.healthyamericans.org.)

1956 – **The President's Council on Physical Fitness** is founded in response to "concern about the physical fitness of America's children compared with their European counterparts."⁵³

1963 – **Weight Watchers** is founded.⁵⁴

1968-1978 – **The Senate Select Committee on Nutrition and Human Needs** finds a growing trend of "over-nutrition" and conducts a series of hearings on dietary excess and the link between diet and disease.⁵⁵ In 1978, the committee releases "Dietary Goals for the United States," which recommends that individuals "increase carbohydrate consumption, but decrease fat, saturated fat, cholesterol, sugar and salt consumption." The report causes controversy within the food and agricultural industries, leading to a more moderate second report later that year.

1974 – **The Children's Advertising Review Unit (CARU)** is founded through the National Advertising Review Council as a strategic alliance between the major advertising trade associations to "promote responsible children's advertising."⁵⁶

1978 – **KidVid Report on Marketing to Children** is released by the FTC, which concludes that advertising candy and other sugary products to children is "unfair and deceptive" since children do not have the developmental capability to evaluate the purpose of advertising, and that this type of advertising should be limited or banned.⁵⁷ In 1981, after rounds of Congressional hearings and forums responding to industry concerns, the FTC issues a statement that such a ban could not be implemented "as a practical matter."⁵⁸

1980 – **Fifteen percent of the U.S. adult population is found to be obese, with 47 percent overweight or obese, according to NHANES data.**⁵⁹

1980 – **The Dietary Guidelines for Americans** are issued, recommending people maintain an "ideal" weight while avoiding too much sugar, sodium, fat, saturated fat, and cholesterol.⁶⁰

1988 – **The Surgeon General's Report on Nutrition and Health** acknowledges a rising trend in obesity and overweight in the U.S.⁶¹ The report concludes that Americans are eating too many calories (particularly from fat and sugars) and are not engaging in enough physical activity. The report also determines that overweight and obesity are connected to a range of health problems. Finally, the report recommends increasing health and physical education in schools, helping families manage nutrition and activity decisions, engaging medical providers to deliver more counseling and related care, creating government programs, and developing strategies to focus on long-term weight loss.

1988 – **The National Center for Chronic Disease Prevention and Health Promotion** is established at the CDC.

1991 – **Youth Risk Behavior Surveillance System (YRBSS)** is established by the CDC to collect youth-related data at the national, state, and local levels.

1992 – **Americans are now spending more than \$30 billion annually on weight-loss products and services,** according to the FTC.⁶²

1992 – **The Food Pyramid** is released by the USDA.

1994 – **Twenty-three percent of the U.S. adult population is found to be obese, with 56 percent either overweight or obese, according to NHANES data.**⁶³

1994 – **The Nutrition Labeling and Education Act (NLEA)** goes into effect, requiring all packaged foods to contain a nutrition facts label with information regarding the amounts and percentage of the Recommended Daily Value of key nutrients, vitamins, and minerals that the food contains, using a standard serving size.⁶⁴

1994 – **Division of Adolescent and School Health (DASH)** “cooperative agreement” funds are first established at the CDC.⁶⁵ Ten states receive the first round of funds in 1994. (Twenty-three states received funds in the most recent awards in 2006.)

1995 – **Weighing the Options: Criteria for Evaluating Weight-Management Programs** is released by the Institute of Medicine (IOM). The report concludes that, “there has been no real change in the gene pool in this period of time of increasing obesity. The root of

the problem, therefore, must lie in the powerful social and cultural forces that promote an energy-rich diet and a sedentary lifestyle.”⁶⁶

1995 – **NIH Consensus Development Conference Statement on Physical Activity and Cardiovascular Health** identifies physical inactivity as a “major public health problem” and issues a “call to action” to find ways to increase physical activity in America.⁶⁷

1996 – **The Surgeon General’s Report on Physical Activity and Health** is issued. It concludes that “Americans can substantially improve their health and quality of life by including...physical activity in their daily lives.”⁶⁸ This report aims to promote increased activity by informing the public of the health benefits that can be achieved through better fitness. It also suggests that early research has found that intervention strategies focusing on increasing physical activity at schools, workplaces, and health care settings are having a positive impact.

1997 – **Operation Waistline** is launched by the FTC to help the public evaluate claims about the weight-loss industry.⁶⁹

OTHER KEY DEVELOPMENTS IN THE 1990s⁷⁰

- Low-fat diets become popular, and related food products are widely introduced.
- Controversies develop over the impact of the increased use of high fructose corn syrup in food products.
- New research examines and places increased emphasis on distinctions among types of fats, proteins, and starches.
- In the late 1990s, low-carb diets become popular, and related food products are widely introduced.
- Research finds that attempts at individual weight loss are rarely maintained and that most obesity-reduction efforts focus on unsuccessful short-term weight-loss strategies.⁷¹
- Additional research and weight-loss efforts are focused on pharmacologic and surgical treatments.⁷²

2000 – **Thirty-one percent of the U.S. adult population is found to be obese, with 65 percent either overweight or obese; and 15 percent of U.S. children are overweight or obese,** according to NHANES data.^{73,74}

2000 – **Division of Nutrition and Physical Activity (DNPA)** “cooperative agreement” funds are established at the CDC aimed at preventing chronic disease and obesity. Six states receive initial funding. (In the most recent round of funding in 2005, 28 states receive funds.)

2001 – **The Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity** is released and further acknowledges the continuing growth of obesity and overweight in the United States, as well as the negative health consequences associated with overweight and obesity. The report calls on policymakers and the country to take action to give the issue a higher national priority.⁷⁵

2001-2006 – **The VERB Youth Media Campaign** is launched by CDC in 2001 as a national multiethnic, multimedia campaign targeted at youths ages 9 to 13 to encourage more physical activity and increase awareness of the importance of exercise. Despite successful results, the program is eliminated in Fiscal Year 2006.

2002 – **Americans spend nearly \$35 billion annually on weight-loss products and services,** according to the FTC.⁷⁶

2003 – **Steps to a HealthierUS** is launched by then-HHS Secretary Tommy Thompson to fund city and community health initiatives related to obesity. In 2005, seven states (which coordinate grants to 25 small cities and rural communities), 12 large cities and counties, three tribes, and one national organization receive grants.

2004 – **The Strategic Plan for NIH Obesity Research** is released after the NIH convenes an internal Obesity Research Task Force and

more than 70 external experts.⁷⁷ The plan calls for research focusing on four themes: lifestyle and behavior modification; medical approaches; links between obesity and health; and health disparities among certain racial, ethnic, and socioeconomic populations.

2004 – **Preventing Childhood Obesity: Health in the Balance** is released by the IOM following a Congressional request.⁷⁸ The report calls for placing a higher national priority on the dramatic rise in childhood obesity and outlines the need to engage a range of sectors, including government and the food industry, to develop better strategies for obesity prevention and reduction.

2004 – **The Calories Count** initiative is launched by the FDA based on findings of an obesity working group that encourages more standardized labeling by food manufacturers and calls for providing better caloric information to the public.⁷⁹

2004 – **The Obesity and the Built Environment: Improving Public Health Through Community Design** conference is held by the National Institute of Environmental Health Sciences (NIEHS). The recommendations include developing policies and strategies to make the “built environment” more conducive to healthy living.⁸⁰

2005 – The USDA and HHS release the updated federal **Dietary Guidelines for Americans, 2005**, and the USDA updates the **Food Guide Pyramid** to **MyPyramid**.⁸¹ The guidelines stress the need for better nutrition and fewer total calories per day, as well as the importance of maintaining a healthy weight and engaging in physical activity. The guidelines also call for people to eat more fruits, vegetables and whole-grain foods and fewer sweets, while limiting trans and saturated fats and sodium. A recommendation for physical activity was added for the first time to the guidelines and pyramid.

CRITICISMS OF THE GUIDELINES

A number of nutrition experts criticize the Dietary Guidelines for Americans and MyPyramid for not suggesting more limits on “refined” starches, for not distinguishing among types of proteins, for ignoring “evidence that these foods have different types of fats,” and for overemphasizing/encouraging the consumption of three servings of dairy or milk a day.⁸²

A range of academic nutrition researchers and advocates further criticize the federal Dietary Guidelines for Americans and MyPyramid, claiming that the recommendations are influenced by commercial interests rather than the best guidance of current research. One article appearing in *Nature* claims that the guidelines “inevitably amount to a compromise between nutrition advocates and the food and agriculture lobbies.”⁸³

Marion Nestle, Ph.D., a professor at New York University and a critic of the food industry, additionally points to what many view as a conflict of interest within the USDA. Although the USDA has a mission to protect the interests of farmers and their economic well-being, the agency also must produce dietary guidelines that reduce total caloric intake if strides are to be made against obesity.⁸⁴

2005 – The We Can! Ways to Enhance Children’s Activity and Nutrition program is launched by HHS and aims to provide a resource for parents and caregivers to help children ages 8-13 to maintain a healthy weight.⁸⁵

2006 – Perspectives on Marketing, Self-Regulation, and Childhood Obesity, a report based on a 2005 workshop by the FTC and HHS, is released.⁸⁶ The report emphasizes the changing marketing environment, including the impact of the Internet, event marketing, product packaging, and video games. It also supports strategies and rec-

ommendations around “self-policing” by the food, beverage, and restaurant industries.

2006 – Food Marketing to Children and Youth: Threat or Opportunity? is released by the IOM.⁸⁷ According to the report, the food, beverage, and restaurant industry in the United States is now worth \$900 billion, and industry-wide, more than \$10 billion a year is spent on marketing food and beverages to children and youth. The IOM committee recommends that industry should improve its self-regulation or government should intervene with additional regulation and legislation.

SOME OTHER KEY DEVELOPMENTS IN THE 2000s

- Research suggests that childhood obesity is a predictor of obesity later in life and that mothers who are obese when pregnant can increase a child’s risk for some birth defects, diabetes, and obesity.^{88, 89, 90, 91, 92, 93, 94, 95, 96} Additionally, research further shows the influence of parents’ health, eating habits, and activity habits on the likelihood of a child being obese or developing obesity.^{97, 98, 99, 100, 101, 102, 103, 104}
- A range of research continues to show a decline in physical activity as children enter adolescence and further ties “sedentary behaviors,” such as watching television and playing video or computer games, with increased snacking behavior and increased risk for obesity.^{105, 106, 107, 108, 109}
- Other research examines how school lunches and junk food sold outside of regular school breakfast and lunch programs can increase a child’s risk for obesity,^{110, 111, 112, 113} and how obesity can negatively impact a student’s school performance and mental health.¹¹⁴

CHANGES IN AMERICA'S EATING AND PHYSICAL ACTIVITY HABITS OVER TIME

Trends In U.S. Physical Activity

The majority of Americans do not participate in the recommended amount of physical activity.¹¹⁵ In 2003, 54.1 percent of adult Americans failed to meet the recommended guidelines for physical activity.¹¹⁶

However, according to recent studies, rates of leisure time physical inactivity have declined significantly in recent years, from 29.8 percent in 1994 to 23.7 percent in 2004. The largest decline was among men ages 50 to 59 (from 33.5 percent to 23.5 percent) and among women ages 60 to 69 (from 37.8 percent to 28.5 percent). There are large ethnic differences, however, in physical inactivity rates.¹¹⁷

In 2003, 45.9 percent of adults participated in CDC's and American College of Sports Medicine's (ACSM) recommended levels of physical activity.¹¹⁸

Changes In America's Eating Habits

In 2005, the Robert Wood Johnson Foundation and the American Heart Association issued a statistical sourcebook entitled, "A Nation at Risk: Obesity in America."¹¹⁹ One section of the book compiled data from scientific research studies about changes in the eating patterns of Americans over the past few decades. Some of the trends include:

■ More Calories

- ▲ Adults consumed approximately 300 more calories daily in 2000 than they did in 1985.¹²⁰
- ▲ Adolescent boys consumed approximately 9 percent more calories in 1994 than they did in 1977, and adolescent girls consumed approximately 7 percent more.¹²¹

■ Bigger Portion Sizes

- ▲ A study in the Journal of the American Medical Association examined the rise in portion sizes from 1977 to 1998.¹²²

■ Fewer Fruits, Vegetables, and Whole Grains

- ▲ A 2003 USDA report examining Americans' food consumption patterns concludes that America's per capita fruit and vegetable consumption is "woefully low" and contains little variety.¹²³
- ▲ Per capita grain consumption has increased nearly 50 percent since the early 1970s, but consumption of whole grains has dropped.¹²⁴

■ More Sugar

- ▲ "Added sugar" consumption is nearly three times the USDA recommended intake.¹²⁵

- ▲ Average consumption of added sugars increased 22 percent from the early 1980s to 2000.¹²⁶

■ More Dietary Fat

- ▲ Americans consumed an average of 600 calories worth of added fats per person per day in 2000.¹²⁷

■ A Drop in Drinking Milk and a Large Increase in Drinking Soda and Fruit Juice

- ▲ Milk consumption dropped 39 percent from 1977 to 2001 among children ages 6 to 11, while consumption of soda rose 137 percent, fruit juice rose 54 percent, and fruit drinks rose 69 percent.¹²⁸

■ A Major Increase in Eating out

- ▲ Food spending in restaurants rose from approximately 25 percent in 1975 to 40 percent in 1995.
- ▲ Spending in fast-food restaurants has grown 18 times (from \$6 billion to \$110 billion annually) in the past three decades.
- ▲ In 1970, there were approximately 30,000 fast-food restaurants in the United States; in 2001, there were approximately 222,000.
- ▲ Children ate out at fast-food and other restaurants nearly three times more in 1996 than they did in 1977.

PORTION DISTORTION

20 YEARS AGO

Coffee with whole milk and sugar

8-ounce serving size
45 calories

Difference: 305 Calories

Muffin

1.5-ounce serving size
210 calories

Difference: 290 Calories

Pepperoni pizza

2 slices
500 calories

Difference: 350 Calories

Chicken Caesar salad

1 1/2-cup serving size
390 calories

Difference: 400 Calories

Popcorn

5-cup serving size
270 calories

Difference: 360 Calories

Chicken stir fry

2-cup serving size
435 calories

Difference: 430 Calories

TODAY

Mocha with steamed milk and syrup

16-ounce serving size
350 calories

Muffin

4-ounce serving size
500 calories

Pepperoni pizza

2 slices
850 calories

Chicken Caesar salad

3 1/2-cup serving size
790 Calories

Popcorn

11-cup serving size
630 calories

Chicken stir fry

4 1/2-cup serving size
865 calories

Source: National Heart, Lung, and Blood Institute Obesity Initiative, Portion Distortion II Interactive Quiz.
Accessed at: http://www.hin.nhlbi.nih.gov/oei_ss/PDII/download/odf/PD2.pdf



Survey of Chronic Disease Directors

In order to find out which obesity prevention and reduction strategies experts believe are most effective and should be prioritized, TFAH conducted a survey of state Chronic Disease Directors (CDDs). CDDs serve on the front lines in each state by focusing on developing and implementing policies and programs to prevent chronic diseases.

CHRONIC DISEASE DIRECTORS: AT THE FOREFRONT OF OBESITY PREVENTION AND CONTROL

CDDs are state government-employed experts who focus on chronic disease prevention and public health promotion. They participate in each stage of health promotion, translating research into practice, developing programs at the local level, and evaluating the effectiveness of programs. They also use their vast experience to work for public policies that promote the health of their state and the nation.

In June 2006, the National Association of Chronic Disease Directors (NACCD) distributed information about the survey to the CDDs via email. The survey was administered through the Internet service Survey Monkey (www.surveymonkey.com) and was available for a period of approximately two weeks. Twenty-six out of 50 CDDs responded to the survey. (See Appendix C for a list of survey participants.)

Overall, the CDDs believe that there are no “quick fixes” to the obesity epidemic and that obesity prevention and reduction strategies require a holistic and long-term approach. The survey results suggest CDDs

face a number of serious barriers as they work to counter this major health concern. Some significant barriers include:

- Insufficient funds to support serious and sustained strategic efforts.
- Lack of political prioritization.
- Difficulties in combating perceptions that obesity is only an “individual” concern.
- Not enough “translation” of research to support practical, on-the-ground application of science into policies and programs.
- The need to establish other ways to measure “success” and behavior change in addition to weight loss and BMI.

1. Funding, Public Perceptions, and Political Seen as Biggest Barriers to Solving the Problem of Obesity

The CDDs ranked the following as the three biggest barriers to addressing obesity:

- Lack of population health funding for health promotion and disease prevention rated 8.55 on a 10-point scale.
- The political view that obesity is more a personal responsibility issue than a public policy issue rated 7.88 on a 10-point scale.
- Lack of political priority rated 7.80 on a 10-point scale.

2. No Consensus On An “Ideal Fix”

There was no consensus on what an “ideal fix” would be, even if budget constraints were not an issue. When asked to outline what an ideal program might look like, the most popular answers focused on changing

The CDDs ranked these above other barriers, including: poor school nutrition; lack of public engagement; better research on “intervention” strategies; and confusing messaging regarding obesity and overweight; and the public view of obesity as a vanity issue rather than a health issue.

the “built environment,” improving community planning, and developing consistent messages around obesity and overweight for public information campaigns.

3. Not Enough Research Or Tools For Obesity And Obesity Interventions

Nearly half of the CDDs responded that they did not have enough quality research to help construct appropriate interventions for the residents of their states.

In addition, when asked what they would need to construct appropriate interventions, 10 of the directors responded that they need-

ed more research about the effectiveness and impact of programs that have been successful, which would help provide evidenced-based models to follow. Eight responded that they needed more funding and staff. Three indicated they wanted more input into built environment issues, and two wanted better school nutrition and physical education standards.

4. Childhood Obesity: Prioritize School-Based Efforts And Strategies Involving Parents And Caregivers

The CDDs ranked “school-based approaches, such as increasing physical education classes, more free recess/play time, or improving the nutritional content of foods sold in schools” as a top priority in combating childhood obesity. They ranked “public education campaigns targeting parents and primary caregivers about the importance of healthy eating and physical activity for their children” second.

CDDs were mixed about the strategy of “work[ing] with medical doctors and other health care professionals to make sure they

are providing the necessary guidance about healthy eating and exercise at routine check-ups, and [to] ensure that [this guidance is] reimbursed by third party payers.” Eight ranked it as a high priority, while 14 ranked it as a low priority, and two were in the middle.

The CDDs universally ranked the “built environment” as a low priority for childhood obesity strategies. This is possibly because they viewed other approaches, such as focusing on schools, as more important when trying to target efforts around children.

In a separate question, CDDs rated strategies to counter childhood obesity. The top ranked answers included:

- “Parents should role model for and teach healthy eating to their children, as well as stress the importance of physical activity” rated 9.11 on a 10-point scale.
- “Schools should increase the amount of physical education” rated 8.67 on a 10-point scale.

5. Adult Obesity: Workplace Strategies As Top Priority

The CDDs ranked workplace approaches as the top priority for adult obesity policy strategies. More than two-thirds ranked it as their first or second choice out of four options. These policies include having employers provide employees with information about healthy eating and exercise, as well as places and time to work out.

The second highest rated strategies were related to the “built environment” and working with health care providers. Built environment issues include policies related to sidewalks, parks, and gymnasiums. Working with health care providers includes providing guidance from doctors and other health care professionals about healthy eating and exercise at routine checkups, and ensuring these services are reimbursed by third party payers.

6. Health Officials Feel They Have Little Influence Over Built Environment Issues

The CDDs feel they have little influence over built environment issues. Nine said they have “no influence at all;” 15 said they had “a little” or “some” influence; and none said he or she had “a great deal” of influence.

In a separate question, the CDDs were asked to rate their view of the importance of different “built environment” policies. The three policies that ranked the highest are below.

- “Meal and vending contracts in schools should mandate healthier options with maximum nutritional value, rather than the current emphasis on minimum revenues” rated 8.38 on a 10-point scale.
- “Schools should improve the quality of physical education” rated 8.29 on a 10-point scale.

Public education campaigns to target high-risk adult populations was ranked last by the CDDs.

In a separate question, the CDDs were asked to rate public policy initiatives based on their effectiveness in addressing obesity among adults.

- “Providing tax or other incentives to businesses that subsidize gym memberships, provide fitness facilities at worksites, or take other measures to encourage exercise, such as 15-minute activity breaks” rated the highest at 8.29 on a 10-point scale.
- “Government or worksite provision for safe running and bike paths, as well as other green spaces in all communities” rated 7.62 on a 10-point scale.
- “Health insurance regulations mandating coverage of nutrition and/or weight-loss counseling” rated 7.52 on a 10-point scale.

- “Assuring the safety of parks, playgrounds, bike paths, and other public green spaces” rated 8.65 on a 10-point scale.
- “Amending zoning laws to implement smart growth principles, such as more sidewalks and walking-friendly environments,” rated 8.57 on a 10-point scale.
- “Change DOT (department of transportation) policies and priorities to make roads more pedestrian and bicycle friendly,” rated 8.50 on a 10-point scale.

7. Addressing Ways To Measure Obesity

CDDs were asked to rate different ways of measuring obesity.

■ They rated using “minutes of physical activity per week” and “prevalence of [obesity-] related chronic diseases like diabetes” as top choices.

■ BMI consistently was picked as the second or third option.

■ Weight in pounds, and pounds lost or gained in a given year, tied for last place in the rankings.



An Overview of “Intervention Points” for Obesity Strategies

In order to help inform the development of new and better policies, this section of the report concentrates on reviewing current obesity-policy approaches aimed at **A.) children**, **B.) adults**, and **C.) community design**. It provides an overview of “intervention points” and examples of policies and programs in action.

Individual behavior change is difficult to achieve without addressing the context in which people make decisions. Sustained behavior change requires long-term strategies at both an individual and community level. This lesson has been borne out across a range of public health concerns, from tobacco control to HIV prevention, and is now apparent in the struggle to reduce and control obesity.

Addressing such a pervasive social issue is challenging and may seem overwhelming. However, with the number of Americans facing obesity-related health problems, the problem is too important to ignore. Current efforts, however, are often limited in scope and resources, as evidenced by TFAH’s survey of CDDs and other research.

Public health experts must help policymakers to better identify specific, practical strategies that are both proven and cost-effective.

A number of promising strategies to combat obesity in communities are emerging based on recommendations from experts in the field, but much more needs to be done. Practitioners suggest that strategies must focus on supporting lifelong lifestyle changes and working with communities to help make it easier for people to make these changes in their lives.

Different strategies have received greater or lesser emphasis in studies and in practice than others. The following offers a range of current trends and approaches.



A. STRATEGIES TO ADDRESS CHILDHOOD OBESITY

Over the last decade, experts have emphasized the need to develop obesity prevention and control strategies that focus on children. This approach is viewed as particularly important because instilling in children the importance of healthy behaviors can help reduce their risk for obesity and related health issues throughout their lives.

Child-focused obesity policies have largely focused on:

- Working with families as a unit;
- Reaching children through child care;
- Reaching children through schools (improving food and physical activity within schools and in after-school programs);

I. Working with families and improving nutrition and physical activity opportunities at home

Efforts to involve families in obesity-prevention efforts are viewed by many as an effective area for intervention activities. Programs that target improvements within home environments by reaching children via their parents or guardians “produce significant long-term results,” according to a review, funded in part by NIH, of a range of studies.¹³⁰

- Reaching children through public education marketing campaigns;

- Limiting the marketing of less nutritious foods to children; and

- Collaborating with medical care providers.

A 2006 Cochrane review of 22 intervention programs aimed at children concluded that, while many diet and exercise interventions to prevent childhood obesity can be effective in promoting a healthy diet and increased weight loss, overall they “are not effective in preventing weight gain.”¹²⁹

A number of studies have demonstrated a connection between the weight of parents (particularly mothers) and children, suggesting strategies that address families as a unit may be particularly important, especially when children are young and “while parental influence is still strong and before obesity-promoting behaviors have become well ingrained.”¹³¹

EXAMPLES OF INTERVENTION OPPORTUNITIES FOCUSING ON FAMILIES

- **Women, Infants and Children (WIC) programs:** One example of an effective intervention strategy has involved working with mothers participating in the federally-funded Women, Infants and Children (WIC) nutrition program to understand the benefits of providing healthier beverage options to children and encouraging more activity.¹³² An education effort through a WIC clinic setting in Virginia in 2004 led to mothers providing more water to children rather than sugared beverages and encouraging more active playtime.¹³³

A program in Kentucky found that WIC mothers had misperceptions that if their children were heavier it also meant they were healthier and that they introduced solid foods earlier than recommended.¹³⁴ Targeted education efforts helped result in the mothers gaining an increased understanding for healthy option for feeding their children.

- **Food Choices in Homes:** Other research has found that children whose mothers limited their food options had lower BMI scores.¹³⁵

- **Breastfeeding:** A 2005 review of literature on breast feeding and obesity concluded that “breastfeeding is protective against obesity, although the precise magnitude of the association remains unclear. Increasing uptake of breastfeeding could form an important part of population strategies to prevent obesity.”¹³⁶

2. Reaching children through child care

Some researchers have raised concerns that “little is known about the physical activity behavior of preschool-aged children or about the influence of preschool attendance

on physical activity.”¹³⁷ Experts emphasize that “child care represents an untapped rich source of strategies to help children acquire positive health habits to prevent obesity.”¹³⁸

CHILD CARE AND PRESCHOOL NUTRITION AND ACTIVITY POLICIES

Thirty-eight states and D.C. have child care outdoor time requirements;

Eight states require at least one outdoor hour a day; and

Five states (Delaware, Georgia, Illinois, Mississippi, and Tennessee) have more comprehensive nutrition, physical activity, and media use policies.¹³⁹

Head Start, a federal-state program for care for low-income 3- and 4-year-olds, routinely weighs and measures the height of children in the program. While it is unclear how this data is used, researchers suggest it could be

a rich area for future studies and interventions.¹⁴⁰ Because participation in Head Start is based on socio-economic status, children in the Head Start program often fall into high-risk categories for obesity.

EXAMPLE PRESCHOOL CURRICULUM: NORTH CAROLINA'S “COLOR ME HEALTHY” PROGRAM FOR 4- AND 5-YEAR-OLDS

“Color Me Healthy” is a preschool curriculum program designed to teach children ages 4 and 5 about nutrition and physical activity. It is currently in use in nearly 50 counties in North Carolina, and teacher participants report that it is generating positive results.¹⁴¹ The curriculum includes:

- A teacher’s guide with 12 lesson plans.
- Picture cards, including “Color of Foods,” “Where the Foods Grow,” “Places to be Active,” and “Dairy Foods.”
- Classroom posters, including “Colors of Foods” and “Pretend You Are a...,” which use the alphabet to encourage physical activity.
- Music -- seven original songs have been written.
- Hand stamp -- for use as a reward.
- Parent newsletters and posters -- 14 possible editions to be distributed that coincide with the classroom lessons and two posters to display in parent areas.¹⁴²

3. Reaching children through schools and in after-school programs by improving food and physical education and encouraging physical activity

School-based programs can yield positive results in preventing obesity, and a number of studies call for “broader implementation of successful programs.”¹⁴³ Children spend large portions of time at school, and in before- and after-school programs, and they often consume two meals and snacks in these settings.

The more than 14,000 school districts in the United States have primary jurisdiction for setting policies. States can establish policies or pass legislation that affect schools, but the localities typically have discretion in deciding if they will follow them. States may try to create incentives for following policies, such as attaching compliance to state

funding. However, school districts may choose to ignore state policies.

Emerging school-based efforts have focused on improving the quality of food sold in schools, limiting sales of less nutritious foods, improving physical education and health education, and encouraging increased physical activity either within the school day or through extracurricular pursuits. Some communities have also invested in more comprehensive programs, such as a statewide initiative in Arkansas, which includes measuring the BMIs of students as one component, and the Child and Adolescent Trial for Cardiovascular Health (CATCH) program involving 96 schools in 4 states.

EXAMPLES OF SUCCESSES IN SCHOOL-BASED APPROACHES TO REDUCING OBESITY

- **The Child and Adolescent Trial for Cardiovascular Health (CATCH)** elementary school program encompassing 3,714 students in 96 schools in 4 states focused on educating students, teachers, and staff and modifying school lunches and physical education.^{144, 145} The program showed positive results, with students consuming healthier diets and engaging in more physical activity. The findings suggest that a program that encompasses a school-based approach can yield improvements. Activity levels for students at the older age ranges of the study began to dissipate toward the end of the study, demonstrating an increased need to continue with middle- and high-school interventions.
- A 2001 study found that activity levels in students increased in school-based interventions involving supervision and access to recreational facilities.¹⁴⁶ Also, studies have shown that programs aimed at improving student participation in physical activity generally have positive results.¹⁴⁷ For example, one study of 24 high schools offering a **Lifestyle Education and Activity Program (LEAP)** resulted in increased activity among girls.¹⁴⁸

OBESITY-RELATED STANDARDS IN SCHOOLS – 2006

	Nutritional Standards for School Meals	Nutritional Standards for Competitive Foods	Limited Access to Competitive Foods	Physical Education Requirements	BMI Information Collected	Non-Invasive Screening for Diabetes	Health Education Requirements	Receives CDC School Health Program Grants
Alabama	✓			✓			✓	
Alaska				✓				
Arizona	✓	✓	✓	✓			✓	
Arkansas	✓		✓	✓	✓		✓	✓
California		✓	✓	✓		✓	✓	✓
Colorado			✓	✓				✓
Connecticut			✓	✓			✓	
Delaware				✓			✓	
DC				✓			✓	
Florida			✓	✓			✓	✓
Georgia			✓	✓			✓	
Hawaii		✓	✓	✓			✓	✓
Idaho				✓			✓	
Illinois			✓	✓	✓	✓	✓	
Indiana		✓		✓			✓	✓
Iowa				✓			✓	
Kansas				✓				✓
Kentucky	✓	✓	✓	✓			✓	✓
Louisiana		✓	✓	✓			✓	
Maine		✓	✓	✓			✓	✓
Maryland		✓	✓	✓			✓	
Massachusetts				✓			✓	✓
Michigan				✓			✓	✓
Minnesota				✓			✓	
Mississippi			✓	✓			✓	
Missouri				✓			✓	
Montana				✓			✓	
Nebraska			✓	✓			✓	
Nevada				✓			✓	
New Hampshire				✓			✓	
New Jersey				✓			✓	
New Mexico		✓		✓			✓	
New York			✓	✓			✓	✓
North Carolina	✓		✓	✓			✓	✓
North Dakota				✓			✓	✓
Ohio				✓			✓	
Oklahoma		✓	✓	✓			✓	
Oregon				✓			✓	✓
Pennsylvania				✓			✓	
Rhode Island				✓			✓	✓
South Carolina	✓	✓		✓			✓	✓
South Dakota	✓							✓
Tennessee	✓	✓		✓	✓		✓	✓
Texas	✓	✓	✓	✓			✓	
Utah				✓			✓	
Vermont				✓			✓	✓
Virginia				✓			✓	
Washington				✓			✓	✓
West Virginia		✓	✓	✓	✓		✓	✓
Wisconsin				✓			✓	✓
Wyoming				✓			✓	
Number of States	9	14	20	49 + D.C.	4	2	47 + D.C.	23

FOOD IN SCHOOLS

Most schools participate in the school lunch, breakfast, and after-school programs in coordination with the USDA Food and Nutrition Service (FNS). In order to qualify for federal subsidies to offer free or reduced-cost meals to low-income children, schools must establish meal programs that comply with minimum nutrition standards. Under these standards, the sale of “foods of minimal nutritional value” (e.g., candy, water ices, chewing gum, and soft drinks) are restricted from being sold during meal times in cafeterias, but are not restricted from being sold at any time outside of cafeterias.¹⁴⁹

- **Eleven states have taken legislative action to require higher nutritional standards on school meals than “minimum” USDA requirements.** These states include Alabama, Arizona, Arkansas, California, Kentucky, North Carolina, Rhode Island, South Carolina, South Dakota, Tennessee, and Texas.¹⁵⁰

Food is often available in schools through vending machines, school stores, and à la carte lines in cafeterias. These foods, known as “competitive foods,” are not required to meet the USDA standards. Instead, standards are set by states or local school systems.¹⁵¹

- **Sixteen states have taken legislative action to set nutrition standards on foods sold outside of the school meal programs:** Arizona, California, Hawaii, Indiana, Kentucky, Louisiana, Maine, Maryland, New Mexico, North Carolina, Oklahoma, Rhode Island, South Carolina, Tennessee, Texas, and West Virginia.
- **Twenty states have taken legislative action to limit when and where foods that are not part of the school meal programs can be sold during school hours:** Arkansas, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Kentucky, Louisiana, Maine, Maryland, Mississippi, Nebraska, New York, North Carolina, Oklahoma, Texas, and West Virginia.

ONGOING CONCERNS ABOUT FOOD IN SCHOOLS

- **Substandard nutrition requirements for meals.** USDA meal requirements are focused on states and localities meeting minimum nutrition guidelines. Reports by USDA, GAO, and independent researchers have all found the nutrition in school lunches to be “substandard.”¹⁵²
- **Unmonitored contracting for school lunches.** In December 2004, the Federal Nutrition Service, via new proposed regulations, advised “school food personnel to be more careful about how they contract for the food that will be served to children.”¹⁵³
- **Competitive food polices do not always balance revenue and health.** Many schools receive revenue from the sale of competitive foods. Money from food sales is often used to pay for special activities or items not covered by the school’s budget.¹⁵⁴ However, many schools do not consider that reduced sales within the regular school lunch programs due to “competitive” food sales means the federal government allocates less money to the school lunch programs in the future. Revenue made from competitive food, therefore, often results in a reduction in funding for the school lunch program.

EXAMPLE OF ACTION: THE ALLIANCE FOR A HEALTHIER GENERATION WORKS WITH INDUSTRY TO CREATE VOLUNTARY GUIDELINES FOR ELIMINATING SUGARY DRINKS FROM SCHOOLS

In May 2006, the **Alliance for a Healthier Generation**, a partnership between the William J. Clinton Foundation and the American Heart Association collaborated with the American Beverage Association and representatives of the three largest beverage distributors, Coca-Cola, PepsiCo, and Cadbury Schweppes, to combat the nation's childhood obesity epidemic by eliminating the sale of sugary drinks in schools. The initiative has the potential to help nearly 35 million students lead healthier lives by establishing the following guidelines in elementary, middle, and high schools across the country:¹⁵⁵

Elementary Schools

- Bottled water
- Up to 8-ounce servings of milk and 100-percent juice**
- Low-fat and non-fat regular and flavored milk* with up to 150 calories per 8 ounces
- 100-percent juice** with no added sweeteners and up to 120 calories per 8 ounces

Middle School

- Same as elementary school, except juice and milk may be sold in 10-ounce servings**

High School

- Bottled water
- No- or low-calorie beverages with up to 10 calories per 8 ounces
- Up to 12-ounce servings of milk, 100-percent juice**, light juice and sports drinks
 - ▲ Low-fat and non-fat regular and flavored milk with up to 150 calories per 8 ounces
 - ▲ 100-percent juice** with no added sweeteners and up to 120 calories per 8 ounces
 - ▲ Light juices and sports drinks with no more than 66 calories per 8 ounces
- At least 50 percent of beverages must be water or no- or low-calorie options.

The above guidelines are to remain in effect before and after school hours when child care programs, clubs, arts, and athletic practices take place.¹⁵⁶ The goal of the initiative is to implement these guidelines in 75 percent of schools by summer 2008 and in all schools by summer 2009.¹⁵⁷ Success of implementation, however, is dependent upon the individual states, schools districts and schools as compliance with the guidelines is voluntary.

PHYSICAL EDUCATION IN SCHOOLS

While every state except South Dakota has physical education requirements for students, these requirements are often not enforced and often result in physical education programs of inadequate quality. Some states are considering ways to improve and better implement their requirements. However, these requirements come without financial support, equating to an unfunded, and therefore burdensome, mandate placed on schools and school districts.

Many state education agencies argue that physical education policies are often not enforced because there are already too many other mandated curriculum requirements.¹⁵⁸ Some education experts point out that the Elementary and Secondary Education Act (ESEA), known as the “No Child Left Behind Act,” which emphasizes student achievement on standardized tests, is forcing school districts to divert limited resources away from programs that are not tested under ESEA, such as physical education and extracurricular sports.¹⁵⁹ In addition, states often allow schools exemptions from physical education standards.¹⁶⁰

AMERICAN ACADEMY OF PEDIATRICS’ PHYSICAL ACTIVITY GUIDELINES (2006)¹⁶¹

- **Infants and toddlers** should be “allowed to develop enjoyment of outdoor physical activity and unstructured exploration.”
- **Preschool children (ages 4-6)** should take part in “free play” and “be encouraged with an emphasis on fun, playfulness, exploration, and experimentation.”
- **Elementary school children (ages 6-9)** should “improve their motor skills, visual tracking, and balance. Parents should continue to encourage free play... Organized sports (soccer, baseball) may be initiated...”
- **Middle school children (ages 10-12)** should “focus on enjoyment with family members and friends... Emphasis on skill development and increasing focus on tactics and strategy as well...”
- **Adolescents** should focus on activities that they and their friends enjoy, which is “crucial for long-term participation. Physical activities may include personal fitness preferences (e.g., dance, yoga, running), active transportation (walking, cycling), household chores, and competitive and non-competitive sports.”

HEALTH AND NUTRITION EDUCATION IN SCHOOLS

Healthy People 2010 states that health education should include information about the consequences of unhealthy diets and inadequate physical activity. Health education seeks to teach students about maintaining good health, including the proper nutrition and the value of physical activity, which are keys to controlling obesity. The CDC notes that health education can effectively promote students' health-related knowledge, attitudes, and behaviors.¹⁶² These education programs are intended to help students set a foundation for maintaining good nutritional habits and a physically active lifestyle.

■ **Only four states -- Alaska, Colorado, Kansas, and South Dakota -- do not require schools to provide health education.** However, in states that do require health education, few criteria have been set to ensure the quality of health education curriculum or to establish a minimum credit requirement for graduating students.

BODY MASS INDEX INITIATIVES AND DIABETES SCREENING IN SCHOOLS

A number of states have undertaken initiatives to screen students' BMI levels. The screenings are intended to help the states identify schools, school districts, and student populations that may need interventions to help reduce the prevalence of overweight. Results are typically mailed to parents as well.

■ **Seven states -- Arkansas, Illinois, Maine, New York, Pennsylvania, Tennessee, and West Virginia -- have taken legislative action to support school efforts to test students' BMI levels as either part of health examinations or physical education activities.**

ARKANSAS: BREAKING NEW GROUND IN CHILDHOOD OBESITY STRATEGIES

In 2003, Arkansas passed a comprehensive act to address childhood obesity. One component of the law required the annual measurement and confidential reporting of each student's BMI to his or her parents.¹⁶³ In the 2004-2005 school year, 98 percent of public schools participated in the program. Thirty-eight percent of public school students were found to have a potential obesity problem. The law also required every school district to create a school nutrition and physical activity advisory committee to develop policies and programs to address obesity. Updated data are expected to be released in the summer of 2006.

In 2003, **California and Illinois** enacted legislation **requiring risk analysis and non-invasive screening of students for type 2 diabetes.** In 2005, California also enacted a ballot initiative that encourages additional diabetes awareness and prevention efforts. Two other states, Pennsylvania and Texas, considered legislation to screen students for their potential at-risk status for type 2 diabetes, but the initiatives were not enacted.

FEDERAL INITIATIVES TO SUPPORT SCHOOL OBESITY PROGRAMS

The CDC has supported school-based obesity initiatives by:

Establishing a **Coordinated School Health Program**, which is a model for how to integrate a range of school and community efforts. These include: physical education; health education; health services; nutrition services; counseling, psychology, and social services; encouraging healthier school environments; providing health promotion for school staff; and family and community involvement;

Creating a **School Health Index** self-assessment and planning guide for schools;

Developing a **Physical Education Curriculum Analysis Tool** in partnership with physical education experts across the country;

Administering two surveys -- **School Health Policies and Programs Study** and **School Health Profiles** -- related to children's health in schools; and

Awarding **Division of Adolescent and School Health (DASH)** "cooperative agreement" funds to 23 states in FY 2006. The states receiving DASH funds include: Arkansas, California, Colorado, Florida, Hawaii, Indiana, Kansas, Kentucky, Maine, Massachusetts, Michigan, New York, North Dakota, North Carolina, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Washington, West Virginia, and Wisconsin.¹⁶⁴ The average award is \$411,000. The U.S. Department of Education is the lead agency for these cooperative agreements and works with state departments of health to strengthen school-based policies and programs that address obesity and chronic disease.



4. Public Education Campaigns Aimed At Encouraging Better Nutrition And Activity

Acknowledging that marketing can be a strong vehicle for influencing attitudes and behavior, groups ranging from the FTC to the IOM have issued reports encouraging

the use of social marketing practices to promote healthier behaviors (e.g., increased physical activity) in children and youth.^{165, 166}

EXAMPLE OF A PUBLIC EDUCATION CAMPAIGN FOCUSED ON “TWEENS”: VERB

To help address youth activity concerns and make use of marketing strategies, the CDC in 2001 created and funded a five-year, multiethnic, multimedia campaign called VERB for youths ages 9 to 13 to encourage more physical activity and increase awareness about the importance of exercise.¹⁶⁷ In FY 2006, VERB funding was zeroed out by Congress.

A 2005 evaluation of the program found:

- Seventy-four percent of children knew about the campaign.
- Several subgroups of children -- including perhaps those most at risk, “children from urban areas that were densely populated” and those whose activity was already quite low -- demonstrated positive effects from the campaign, including “more median weekly sessions of free-time physical activity than did children who were unaware of VERB.”
- As awareness of VERB increased, so did activity levels.
- Nine and 10-year-olds who knew about the VERB campaign had 34 percent more activity sessions per week than those who did not know about the campaign.

5. Limiting Marketing Food To Children

Marketing food to children has been a controversial subject since the 1970s. In 1974, the food and marketing industries created a self-regulating Children’s Advertising Review Unit (CARU) of the Council of Better Business Bureaus. A joint 2005 workshop and 2006 report by the FTC and HHS on marketing food and beverages to children provided recommendations that continue to support CARU’s self-policing strategy, stressing a hope that the food and marketing industries will offer more nutritious products with improved packaging to align with nutrition recommendations and to provide consumers with more detailed nutrition information.¹⁶⁸

A 2006 IOM report also suggests that the food and beverage industries and restaurants should encourage healthier diets for children and youth through advertising, and should work with the government, interest groups, and schools to improve marketing practices. The IOM report also suggests that government should use taxes, incentives, and subsidies to encourage better marketing practices among these industries, and that if self-regulation does not produce adequate change, legislation and regulation should be used. The report also adds that a government agency should be funded and created to monitor and report on marketing practices.¹⁶⁹

6. Working With Doctors And Other Health Care Providers

Studies have shown that educating doctors about providing better counseling to patients about physical activity and nutrition has been an important factor in influencing patient behavior change.¹⁷⁰ Children routinely have “well-care” examinations by doctors, providing a strong opportunity for evaluation and counseling related to nutrition and activity. Heightened attention from doctors and other health care providers may be an important strategy for helping at-risk and obese children better manage nutrition and activity.

■ NIH recently provided a multi-year grant to several medical schools to create a nutrition curriculum and practice guidelines called the Nutrition Academic Award.¹⁷¹ The program’s goal is to “encourage development or enhancement of medical school curricula to increase opportunities for students, house staff, faculty, and practicing physicians to learn nutrition principles and clinical practice skills with an emphasis on preventing cardiovascular diseases, obesity, diabetes, and other chronic diseases.”¹⁷²

■ Research featured in the 2006 *Future of Children* journal regarding childhood obesity suggested that “given the magnitude of the childhood obesity problem...pediatricians and other health care providers are going to have to step up and take a major role in the care and health of the obese child. Successfully treating obesity will require a major shift in pediatric care.”¹⁷³

■ The American Academy of Pediatrics recommends that pediatricians ask parents a variety of questions to gauge children’s physical activity, such as “the number of times per week their child plays outside for at least 30 minutes” and “the number of hours per day their child spends in front of a television, video game, or computer screen.”¹⁷⁴ Further, the Academy suggests the use of pedometers to monitor children’s activity levels because pedometers easily count the number of steps a person takes and because of their “gadget appeal among youngsters.”¹⁷⁵

B. STRATEGIES FOR ADULTS AND THE GENERAL POPULATION

Whereas children can often be targeted for obesity-related initiatives through schools, adults are viewed as harder to influence. Additionally, many view adult obesity as an issue of individual responsibility rather than public policy. In fact, this perception was the second highest rated “barrier” to addressing obesity in TFAH’s survey of chronic disease directors. Potential intervention points for reducing obesity among adults include strategies that focus on:

- 1. Focusing on public education campaigns that encourage individuals to adopt and maintain lifestyle changes.**
- 2. Improving both workplace environments and health care benefits associated with obesity prevention and treatment.**
- 3. Focusing on providing comprehensive support within targeted communities.**

- 4. Providing financial or tax incentives to try to influence social change.**
- 5. Limiting lawsuits related to obesity, which some argue encourages increased “personal responsibility.”**

Many adult-centered efforts are focused on finding ways to promote individual behavior change, encouraging people to “eat less and move more,” often through public education efforts. A number of these efforts address particular concerns adults face at different phases of life when body and lifestyle changes are likely. Other strategies have been more community-focused, such as building workplace wellness programs or targeting specific communities with more comprehensive support for behavior change, particularly for those identified to be at risk for higher rates of obesity.

I. Individual Behavior Change And Public Education Campaign Approaches

Overall, obesity prevention and control efforts aimed at encouraging individuals to adopt and maintain lifestyle changes have had limited long-term results.

In a review of federal programs in the 2004 and 2005 versions of “F as in Fat,” TFAH found that the federal government had 300 programs related to obesity, and that “public education” campaigns are a large component of federal nutrition and physical activity policy. Examples of public education campaign efforts range from the USDA and HHS Dietary Guidelines for Americans and MyPyramid to the “Pick Your Health Path” health education and outreach campaign conducted by the HHS Office of Women’s Health (OWH).^{176, 177} Additionally, food

labeling regulations by the FDA represent an effort to provide consumers with better nutrition information.¹⁷⁸ However, no corresponding effort has been undertaken to require restaurants to provide nutrition facts to consumers, even though Americans spend nearly half of their food dollars at restaurants and consume nearly a third of their calories away from home.¹⁷⁹

Public education campaigns, even those targeted at high-risk adult populations, were ranked particularly low as an effective strategy in the TFAH survey of chronic disease directors, and the limited research done to measure the results of these campaigns generally finds they have little impact.¹⁸⁰

STRATEGIES FOCUSED ON WEIGHT LOSS

A recent review of strategies to prevent, control, and treat obesity, funded in part by the NIH, found that adult obesity-related efforts have largely focused on weight-loss efforts.¹⁸¹ The authors found that while some efforts produced better short-term effects than others, overall, “improving the maintenance of weight loss remains the critical challenge for all obesity treatments.”¹⁸²

In terms of larger, community-based lifestyle prevention programs, the article emphasized that “although there are examples of successful [large-scale lifestyle prevention] programs, effects are typically small and tend to be transitory, as shown in programs in both communities and work sites.”¹⁸³ The authors stressed that, based on research, increased and sustained physical activity has been shown to be the “best predictor of weight loss maintenance” and recommend finding more methods to encourage people to engage in physical activity as a lifestyle change.

The authors identified a need to develop wider public policy solutions to address the epidemic, especially since current strategies are not producing large-scale change. The researchers also explored “non-dieting” approaches, which focus on avoiding weight gain rather than on weight loss. Additionally, the authors reported that a major complication in evaluating the “success” of weight loss efforts is due to unrealistic expectations that patients and society hold around weight loss.¹⁸⁴

US PREVENTIVE SERVICES TASK FORCE (USPSTF) RECOMMENDATION ON SCREENING FOR OBESITY IN ADULTS¹⁸⁵

The U.S. Preventive Services Task Force (USPSTF), first convened by the U.S. Public Health Service in 1984, and since 1998 sponsored by the Agency for Healthcare Research and Quality (AHRQ), is the leading independent panel of private-sector experts in prevention and primary care. The USPSTF conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services, including screening, counseling, and preventive medications. Its recommendations are considered the “gold standard” for clinical preventive services.

■ **The USPSTF recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults.**

Rationale: The USPSTF found good evidence that body mass index (BMI), calculated as weight in kilograms divided by height in meters squared, is reliable and valid for identifying adults at increased risk for mortality and morbidity due to overweight and obesity. There is fair to good evidence that high-intensity counseling -- about diet, exercise, or both -- together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese (as defined by BMI > 30 kg/m²). Although the USPSTF did not find direct evidence that behavioral interventions lower mortality or morbidity from obesity, the USPSTF concluded that changes in intermediate outcomes, such as improved glucose metabolism, lipid levels, and blood pressure, from modest weight loss provide indirect evidence of health benefits. No evidence was found that addressed the harms of counseling and behavioral interventions. The USPSTF concluded that the benefits of screening and behavioral interventions outweigh potential harms.

US PREVENTIVE SERVICES TASK FORCE (USPSTF) RECOMMENDATION ON SCREENING FOR OBESITY IN ADULTS

- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of moderate- or low-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults.**

Rationale: The USPSTF found limited evidence to determine whether moderate- or low-intensity counseling with behavioral interventions produces sustained weight loss in obese (as defined by BMI > 30 kg/m²) adults. The relevant studies were of fair to good quality but showed mixed results. In addition, studies were limited by small sample sizes, high drop-out rates, potential for selection bias, and reporting the average weight change instead of the frequency of response to the intervention. As a result, the USPSTF could not determine the balance of benefits and potential harms of these types of interventions.

- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of counseling of any intensity and behavioral interventions to promote sustained weight loss in overweight adults.**

Rationale: The USPSTF found limited data that addressed the efficacy of counseling-based interventions in overweight adults (as defined by BMI from 25-29.9 kg/m²). As a result, the USPSTF could not determine the balance of benefits and potential harms of counseling to promote sustained weight loss in overweight adults.”¹⁸⁶

CONFLICTING AND CONFUSING DIET INFORMATION: SCIENTISTS VS. MEDIA

Often it is difficult to understand why scientific findings about diet and health effects of food seem contradictory or are counterintuitive. One recent study examined the culture clash between how scientific studies are conducted and how their findings are reported in the media.¹⁸⁷ The study claims that the media often do not report enough of the nuances or caveats of studies, and end up providing misinformation to the public. Another study found that newspapers are much more likely to carry scientific results that convey “bad news.”¹⁸⁸ And another analysis found that in a review of 123 press releases issued by journals on scientific studies, only 23 percent mention study limitations, and industry funding was reported in only 23 percent of the 22 study studies receiving such funding.¹⁸⁹

Despite all of the seeming controversies surrounding nutrition guidelines and diets, a December 2004 essay by J. Michael McGinnis, MD, MPP, a senior scientist at the IOM and chair of the IOM Committee on Food Marketing and Diets of Children and Youth, summarizes a translation of the nutrition research: “For most Americans, a healthy diet means: smaller portions (fewer calories), minimal saturated and “trans” fats, few sweets and low fiber-carbohydrates (think desserts and sodas), and more fruits and vegetables.”¹⁹⁰

STRATEGIES TO ENCOURAGE PHYSICAL ACTIVITY

There is widespread consensus about the importance and benefits of physical activity for people's health. The surgeon general's 1996 report on physical activity and health emphasized a wide range of health risks associated with inactivity and stressed the many benefits of activity.¹⁹¹

Research also has demonstrated positive effects of activity, independent of weight loss, suggesting that increased activity can yield positive health results for individuals of any weight.¹⁹² Other studies have shown that even short periods of physical activity can make a difference in improving health, particularly if periods of activity are accumulated throughout the day.¹⁹³

A number of government agencies have issued similar recommendations for activity. However, these recommendations have not been consistent in providing a clear message to Americans:

- The CDC and the American College of Sports Medicine recommend that “every adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week.”¹⁹⁴
- HHS recommends in its Healthy People 2010 publication that “adults should engage in vigorous-intensity physical activity three or more days per week for 20 minutes per occasion.”¹⁹⁵
- MyPyramid recommends that “for health benefits, physical activity should be moderate or vigorous and add up to at least 30 minutes a day.”¹⁹⁶

There has been little success in finding strategies that effectively encourage people to better incorporate physical activity into their lives.¹⁹⁷

A 2004 article by Bernard E. Bulwer, MD, MSc, outlines “major hurdles” to physical activity as well as “trigger factors” that can lead to life changes in behavior:¹⁹⁸

Major hurdles: Time pressures and constraints; traffic-dangerous environs; socio-cultural habits; myths and misconceptions; lack of motivation or support; lack of awareness and knowledge; lack of/or inadequate facilities; and crime or fear of crime.

Trigger factors: Development of a new illness; doctor's orders; failed medical checkup or abnormal laboratory report; illness or loss of a loved one or relative; encouragement or advice from family or friend; new illness or death of a high-profile “celebrity” or public figure; health education messages.

In 1999, CDC issued “**Promoting Physical Activity: A Guide for Community Action,**” to help communities promote physical activity in settings ranging from workplaces, school settings, health care facilities, organizations, or faith-based institutions.¹⁹⁹

The guide stresses targeting efforts based on different groups' levels of receptivity to change, life stages, and settings. It also emphasizes balancing individual change within the context of the communities in which people live, such as access to recreational facilities.

SOME ADULT LIFESTAGES IDENTIFIED FOR PUBLIC EDUCATION AND INTERVENTION EFFORTS

Pre-Pregnancy, Pregnancy, and Post-Pregnancy

Due to the health concerns for both parent and child, a number of health professionals suggest targeting interventions around child-bearing and pregnancy. Pre-pregnancy obesity and excessive weight gain during pregnancy have been found to lead to various health complications both for the mother and the child.²⁰⁰ Obesity in pregnant mothers has been associated with increased risks for delivering children with some forms of birth defects, including heart defects, spina bifida, and neural tube defects. Pre-pregnancy obesity also has been associated with higher rates of pre-term births and the need for cesarean section deliveries.^{201, 202, 203} Some research suggests that children may be at increased risk for developing obesity and diabetes if their mothers are obese and/or diabetic when pregnant.^{204, 205, 206, 207} Additionally, 15 to 20 percent of women experience excessive weight gain during pregnancy, and the strongest influence of weight retention is pregnancy weight gain.²⁰⁸

Baby Boomers

By 2030, “the number of older Americans will have more than doubled to 70 million, or one in every five Americans. The growing number and proportion of older adults places increasing demands on the public health system and on medical and social services.”²⁰⁹

A 2005 article in the *American Journal of Public Health* found that “members of the baby boom generation were more obese, and became so at younger ages than their predecessors.”²¹⁰

Despite their higher levels of obesity and overweight compared to previous generations, life expectancy for baby boomers is expected to surpass that of their predecessors due to advances in health care, nutrition, and the overall standard of living.²¹¹ As a result, the development of strategies for providing education and outreach to boomers that stress the importance of maintaining a high quality of life have been recommended.

Menopause

Many women gain weight in midlife. Women ages 45 to 54 who are already overweight are particularly susceptible to additional weight gain during this life phase. Menopause is viewed as a potential factor, but decreased physical activity and lower resting metabolic rates are also associated with midlife weight gain. A large cross-sectional study from 2001 found that physical inactivity was a greater predictor of weight gain in middle-aged women than menopausal status or hormone use.²¹² A 2006 review of scientific literature found that walking is an important factor for not gaining weight during this life change.²¹³

Seniors

The CDC has found that only 23.3 percent of Americans age 65 and older engage in regular leisure time activity and 51.4 percent are inactive.²¹⁴ Because it is well documented that staying physically active and engaged is important for maintaining a high quality of life, research suggests the need to develop more strategies to encourage senior citizens to become or stay more active in age- and health-appropriate ways.

HHS, through the Administration on Aging (AoA), currently runs the “You Can! Steps to Healthier Aging” program, which had been a component of HHS’s larger STEPS to a HealthierUS program (an initiative proposed to be defunded as of FY 2007). Focused on improving nutrition and physical activity among older Americans, You Can! promotes food choices and physical activity that “can help prevent, delay, and even treat many of the leading chronic ailments.”²¹⁵

2. Workplace Approaches

The workplace is viewed as a good setting for reaching adults. People clearly are influenced by their employers' policies and practices, ranging from whether employees are provided with opportunities to participate in physical activity during the work day to what is offered in the cafeteria or break room to whether health benefits cover obesity prevention, control, and treatment.

TFAH's survey of chronic disease directors revealed "workplace approaches to make sure employees are receiving information about healthy eating and exercise, as well as things like places and time to work out" as the top priority for adult obesity strategies. A review of related research regarding lifestyle intervention programs suggest that,

"although there are examples of successful programs for adults, effects are typically small and tend to be transitory, as shown in both communities and work sites."²¹⁶ However, these documented results may be limited because many of the intervention programs themselves are short-term efforts.

The National Governors Association (NGA) has reported on several state governments that are trying to lead by example by supporting healthy living initiatives for state government employees.²¹⁷ State governments are often both the largest employer and largest provider of health insurance in their states, and can help serve as examples to other employers within a state.

EXAMPLES OF STATE GOVERNMENT WELLNESS EFFORTS

HealthyArkansas

Gov. Mike Huckabee (R-AR) launched HealthyArkansas in May 2004 and has focused on obesity during his tenure as chair of the NGA, helping make the issue an increased national priority. As part of HealthyArkansas, he has implemented both policies and incentives for state employees and others to encourage healthier behavior, including:

- The phase-out of preventive care co-payments for state employees, whose health insurance now covers a broader spectrum of preventive care.
- Giving a \$20 monthly discount on health premiums to state employees who undergo a voluntary health risk assessment. Eighteen thousand state employees and 4,000 of their spouses took advantage of this offer in the first several months.
- Providing Medicaid recipients with more preventive care, such as sessions with a nutritionist.²¹⁸

North Carolina Wellness Initiative

The Department of Health and Human Services (DHHS) Wellness Initiative was launched in 2004 as a 3-year partnership with the North Carolina State Health Plan's HealthSmart Initiative and the North Carolina DHHS.²¹⁹ The program focuses on the department's 18,000 employees. A full-time Wellness Director position was created to work with the department's 21 agencies and 17 facilities to establish wellness committees and wellness programs focused on policy and environmental change that will address the major behavior risk factors for chronic disease. Wellness representatives from each agency and facility serve as members of a new department level Wellness Council to advise the Department on the needed changes to improve workplace support for employees to become more active, eat smart, avoid tobacco, and manage stress.

Additional state employee wellness initiatives are listed in TFAH's "F as in Fat, 2005," available at www.healthyamericans.org.

A number of private corporations support workplace wellness programs, which often include obesity prevention and treatment, as well as incentives for increased physical activity (e.g., gym membership subsidies for employees or break times during the day). Wellness programs often focus on reducing health care insurance costs and maintaining a healthier, more productive workforce. Studies suggest, however, that significant financial benefits often are realized only over

the long term, particularly among those companies that have long employee tenures.²²⁰ Therefore, there is more hesitancy to invest in such programs at companies where employees have shorter tenures, or where businesses shift health care providers. There also is more hesitancy among smaller businesses. Disease-prevention and health-promotion programs often are deemed to be more effective when financial, health improvement, and quality of life factors are all considered.

EXAMPLES OF CORPORATE WELLNESS INITIATIVES AND FINANCIAL BENEFITS FOR BETTER EMPLOYEE HEALTH

- A 2000 study of health expenses of 56,000 **Union Pacific Railroad** employees in 25 states predicted that an aggressive health promotion plan leading to a 1 percent reduction in high-risk employees per year could potentially save the company \$7.74 million (\$US1998) per year in health costs.²²¹
- Return on investment (ROI) for corporate health management programs has been shown to range from \$1.49 to \$4.91 per dollar spent, with a median of \$3.14. Corporate programs that focus on education and self-management techniques had similar returns between \$2.19 and \$13.00 per dollar spent with a median of \$4.50.²²²
- Another study of a corporate health promotion program found an average return of \$3.48 in health care costs. When researchers added less absenteeism into the equation, the ROI rose to \$4.30 per dollar spent.²²³
- **Motorola's** wellness program led to an ROI of \$3.93 for every dollar spent and an extremely small 2.4 percent yearly increase in health care costs for participants versus an 18 percent increase for non-participants.²²⁴

3. Community-Based Approaches

Another strategy for reducing obesity among adults is to focus on communities, permitting a more comprehensive and intensive approach within a particular population. The CDC's Steps for a HealthierUS supports this approach, as does part of its Division of Nutrition and Physical Activity (DNPA) program.

Additionally, some researchers are focusing on efforts to improve the effectiveness of public health research by better involving the communities being studied in the research through more collaboration.²²⁵

The concept of community-based participatory research (CBPR) is evolving to try to better engage community members for longer periods of time in research and to better inform the "cultural competency" and efforts of the research community.

Research has shown there are cultural and economic disparities related to obesity. A 2006 study found that obesity rates are highest for women in poverty.²²⁶ Some efforts have focused on targeting "at-risk" communities and populations, such as mothers who are in the WIC program.²²⁷

STEPS TO A HEALTHIER US PROGRAM

The Steps to a HealthierUS initiative was launched by the Bush Administration in 2003 to help “Americans live longer, better, and healthier lives.”²²⁸ The initiative awards grants to states, cities, and rural communities to support innovative, community-based programs to prevent diabetes, asthma, and obesity.

In FY 2005, “cooperative agreement” funds were awarded to:²²⁹

- Alabama, Arizona, Colorado, Minnesota, New York, Pennsylvania, and Washington to coordinate efforts across 25 small cities and rural communities. The states received funds ranging from \$1.5 to \$2.8 million.
- Austin-Travis County, Texas; Boston, Massachusetts; Cleveland, Ohio; DeKalb County, Georgia; Hillsborough County, Florida; New Orleans, Louisiana; Philadelphia, Pennsylvania; Salinas-Monterrey County, Calif.; San Antonio, Texas; Santa Clara County, California; Seattle-King County, Washington; and St. Petersburg-Pinellas County, Florida. These large cities and counties received funds averaging \$2 million.
- Inter-tribal Council of Michigan; Cherokee Nation, Oklahoma; and Southeast Alaska Regional Consortium. These tribes were awarded funds ranging from \$500,000-\$800,000.

The CDC’s Division of Nutrition and Physical Activity (DNPA) awarded funds to 28 states to help improve their efforts to prevent obesity and other chronic diseases in FY 2006.²³⁰

- Seven states received basic implementation “cooperative agreement” funds (average award \$1 million): Colorado, Massachusetts, New York, North Carolina, Oregon, Pennsylvania, and Washington.
- Twenty-one states received capacity building funds (average award \$450,000): Arkansas, Arizona, Florida, Georgia, Illinois, Iowa, Kentucky, Maine, Maryland, Michigan, Missouri, Montana, New Mexico, Oklahoma, Rhode Island, South Carolina, South Dakota, Texas, Vermont, West Virginia, and Wisconsin.

4. Financial Or Tax Incentives

One way many states have tried to impact the obesity epidemic is by taxing “junk foods” in an attempt to reduce people’s consumption of these products. The National Governors Association Center for Best Practices and the World Health Organization (WHO) have noted that taxes on junk foods are possible tools governments can use to influence consumer choices.^{231, 232}

Seventeen states and D.C. currently have laws that permit foods of low nutritional value to be taxed:²³³ Arkansas, California, D.C., Illinois,

Indiana, Kentucky, Maine, Minnesota, Missouri, New Jersey, New York, North Dakota, Rhode Island, Tennessee, Texas, Virginia, Washington, and West Virginia.

These taxes are very controversial. Proponents of the taxes argue that a tax on junk food could be used to fund a healthy eating and nutritional information campaign.²³⁴ Opponents argue that junk food taxes are regressive and unlikely to encourage people to substitute healthier foods for junk food.²³⁵

5. Limiting Lawsuits Related To Obesity

Another way many states have responded to the obesity epidemic is to pass laws that prevent individuals from suing restaurants, manufacturers, and marketers for contributing to unhealthy weight and related health problems. These “limiting liability” laws are fairly controversial, and whether or not they are viewed as effective for obesity prevention or reduction, they are one of the most visible sets of obesity-related policies to emerge in recent years.

Twenty-four states have passed obesity “liability laws”: Arizona, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Louisiana, Kansas, Kentucky, Maine, Michigan, Missouri, New Hampshire, North Dakota, Ohio, Oregon, South Dakota, Texas, Tennessee, Utah, Washington, Wisconsin, and Wyoming.

Proponents of these bills argue that the central issue is “common sense and personal

responsibility.”²³⁶ Passage of the bill indicates a level of support for the view that obesity is an individual health issue and that no single food source can or should be held accountable for “causing” obesity or associated health risks.²³⁷ Supporters also endorse a statement from the White House that “food manufacturers and sellers should not be held liable for injury because of a person’s consumption of legal, unadulterated food and a person’s weight gain or obesity.”²³⁸

Opponents of limited liability laws support the position that “it’s impossible for consumers to exercise personal responsibility when businesses are concealing important information about their products,” such as the number of calories in restaurant food or lack of consistency in food labeling.²³⁹



OBESITY RELATED STATE INITIATIVES -- 2006

	Has Snack Taxes	Has a CDC State-Based Nutrition & Physical Activity Program	Receives STEPS Grant	Has Limited Liability Laws
Alabama			✓	
Alaska				
Arizona		✓	✓	✓
Arkansas	✓	✓		
California	✓			
Colorado		✓	✓	✓
Connecticut				
Delaware				
DC	✓			
Florida		✓		✓
Georgia		✓		✓
Hawaii				
Idaho				✓
Illinois	✓	✓		✓
Indiana	✓			✓
Iowa		✓		
Kansas				✓
Kentucky	✓	✓		✓
Louisiana				✓
Maine	✓	✓		✓
Maryland		✓		
Massachusetts		✓		
Michigan		✓		✓
Minnesota	✓		✓	
Mississippi				
Missouri	✓	✓		✓
Montana		✓		
Nebraska				
Nevada				
New Hampshire				✓
New Jersey	✓			
New Mexico		✓		
New York	✓	✓	✓	
North Carolina		✓		
North Dakota	✓			✓
Ohio				✓
Oklahoma		✓		
Oregon		✓		✓
Pennsylvania		✓	✓	
Rhode Island	✓	✓		
South Carolina		✓		
South Dakota		✓		✓
Tennessee	✓			✓
Texas	✓	✓		✓
Utah				✓
Vermont		✓		
Virginia	✓			
Washington	✓	✓	✓	✓
West Virginia	✓	✓		
Wisconsin		✓		✓
Wyoming				✓
Number of States	17 + D.C.	28	7	24

C. STRATEGIES TO ADDRESS “SMART GROWTH” AND COMMUNITY-DESIGN

The “built environment” is an increasingly emerging area of focus for interventions. It involves examining how community design impacts physical activity and how neighborhood factors influence eating patterns.²⁴⁰

Strategies that focus on “smart growth” seek ways to help people make healthier diet and activity decisions by literally changing the environments in which they live. Many of these efforts focus on:

- 1. Providing more recreational spaces, such as sidewalks and parks, to make it easier for people to engage in more physical activity.**
- 2. Providing increased accessibility to purchase affordable nutritious food, such as increasing the number of grocery stores and farmers markets in lower-income areas.**

SOME KEY “BUILT ENVIRONMENT” FACTORS

- Sidewalks
- Bike paths
- Street layout
- Recreational spaces, such as parks and community centers
- Proximity of stores and offices within walking distance of homes
- Safety of communities
- “Sprawl”
- Numbers of grocery stores within neighborhoods
- The types and numbers of restaurants available within neighborhoods
- Farmers’ markets

CURRENT POLICY ACTIVITY

- A 2005 TFAH analysis reviewed illustrative examples in all 50 states of emerging government programs concerning green space (undeveloped recreational spaces), brownfields (abandoned or contaminated former commercial or industrial sites), and reducing sprawl.²⁴¹
- A 2004 TFAH analysis found that there have been few systematic or comprehensive state and municipal efforts to address the lack of access to supermarkets and nutritious food in low-income areas.²⁴²

Both studies can be accessed at www.healthyamericans.org.

1. Influence On Physical Activity

Although some researchers began examining the effect of community design more than a decade ago, “only recently have investigators expanded such work to address more specifically the impact of community design on physical activity [and] on obesity” and related health effects.²⁴³ Allen Deary of the National Institute of Environmental Health Studies summarized some key reports in a 2004 editorial in Environmental Health Perspectives:

- In 1994, researchers found that people walk and bike less in communities that are “less dense” or where shopping and places of work are spread out in distance.²⁴⁴
- A 2003 study found that sprawl was associated with people walking less, higher rates of obesity, and higher levels of hypertension.²⁴⁵
- Another 2003 research group concluded higher physical activity and lower obesity levels could be seen in more “walkable” communities.²⁴⁶
- And a 2004 study that examined 13 countries with a wide variety of types of cities found a decline in obesity in communities with more “mixed land use” (closer prox-

imity of the home to stores and work places), and a rise in obesity in communities with increased time spent in a car daily, even when controlling for factors such as age, income, education, and gender/ethnicity.²⁴⁷

Another study examines obesity within a single city, San Francisco, and reinforces previous research findings that increased “density” within a city is associated with less automobile use and lower rates of obesity.²⁴⁸

A 2005 analysis of the National Household Transportation Survey shows that residents in large urban areas with rail transit systems are much more likely to walk for utilitarian purposes.²⁴⁹ Those in large urban areas without a rail transit system are still more likely to walk than people who do not reside in cities, but to a lesser extent than those with rail transit systems available.²⁵⁰

Additional studies have found that a lack of “green spaces” and other recreational areas may contribute to higher obesity rates. For instance, fewer parks and swimming pools are typically available in communities with high levels of poverty and with greater numbers of African Americans and Latinos, who have higher rates of overweight and obesity.²⁵¹

2. Influence On Food Availability And Choice

A body of research focuses on food availability in relationship to cost and accessibility:

- There is limited access to supermarkets and nutritious foods in most urban and rural areas.²⁵²
- Low-income zip codes tend to have fewer and smaller grocery stores than higher-income zip codes.²⁵³ Fewer supermarkets in low-income communities mean less access to healthy foods.²⁵⁴
- People in low-income areas often pay more for nutritious foods such as fresh fruits and vegetables.²⁵⁵
- Low-income households are six to seven times less likely than other households to own a car, and are also less likely to live in a neighborhood with a supermarket.²⁵⁶
- A study by the Metropolitan Chicago Center found that 60 percent of major grocery stores in Chicago are in affluent neighborhoods.²⁵⁷
- A 2003 survey in California found that 50 percent of respondents rated their neighborhoods as fair, poor, or very poor in terms of healthy food offerings for children.²⁵⁸

■ A 2006 study demonstrated a significant relationship between the presence of supermarkets and lower rates of obesity. The same study also found that the presence of convenience stores was significantly associated with higher rates of overweight and obesity.²⁵⁹

The “urban grocery store gap,” coupled with inadequate transportation services, has led inner-city consumers to do the bulk of their grocery shopping at convenience stores, which lowers the quality and variety of available foods. The studies conclude that this makes it significantly harder for people in these areas to maintain a balanced diet.^{260 261}

A number of factors often cited as barriers to improving supermarket access include:

- Costs associated with inner-city store operations (rent, labor, insurance) are higher than in suburban locations.
- Urban locations often are limited in space due to higher rents and traditionally crowded development patterns (versus innovative patterns such as building stores so they are on multiple floor levels.)
- Public development agencies typically focus more on housing and retail entities than supermarkets.²⁶²

Several recent studies have examined the relationship between access to healthy foods and grocery stores and ethnicity. A 2002 study from researchers at the University of

North Carolina at Chapel Hill compared U.S. Census data on neighborhood-level ethnicity in Mississippi, North Carolina, Maryland, and Minnesota to commercial locations for the purchase of food in those states.²⁶³ The researchers found that there are four times the number of supermarkets in predominantly white areas of those states than in predominantly African-American areas.²⁶⁴

A separate 2002 study by researchers at the Mount Sinai School of Medicine in New York City examined the availability of healthy food choices for diabetics along ethnic lines.²⁶⁵ The researchers examined access for foods appropriate for individuals with diabetes in the lower-income, predominantly African-American and Latino neighborhoods of East Harlem compared with the Upper East Side of Manhattan, a predominantly white, higher-income area. Based on the size of the stores and the availability of healthy foods, the researchers determined that residents of East Harlem have significantly less access to healthy foods vital for controlling or preventing diabetes.²⁶⁶ A recent series in the New York Times demonstrated the significant differential in diabetes within the city, where “people of East Harlem die of diabetes at twice the rate of people in the city as a whole. Diabetes-related amputations are higher than in any other part of New York. For hospitalizations linked to diabetes, East Harlem is the third-worst neighborhood. It has the largest percentage of obese people, whose weight makes them more susceptible to Type 2 [diabetes].”²⁶⁷

FARMERS' MARKET INITIATIVE: KAISER PERMANENTE MEDICAL GROUP

In 2003, the Kaiser Permanente Medical Center in Oakland, California opened an organic farmers' market. The three main goals of its creation were to promote healthy eating as an element of Kaiser Permanente's health education and maintenance programs, to create a healthy food environment for staff, patients, and community residents, and to support the agricultural community.²⁶⁸ Thirty farmers' markets at Kaiser Permanente facilities in five states had been planned to open by the end of 2005. The farmers' markets are operated by the Pacific Coast Farmers' Market Association, which operates and promotes certified farmers' markets in various locations across Northern California.²⁶⁹



Recommendations

The American obesity epidemic is a startling phenomenon. Clearly, numerous and often interrelated factors have contributed to rising obesity rates. Strategies to counter the alarming trend must avoid becoming the equivalent of “fad diets” for the general population. Most short-term, limited polices, like most individual short-term diets, will not result in long-term sustained success.

Much of the research, as well as TFAH’s survey of Chronic Disease Directors, find that efforts to combat the obesity crisis will not be successful until there is a real paradigm shift, with a sustained focus on well-funded,

long-term approaches, a revitalized research agenda that emphasizes longitudinal studies, and a fresh look at what constitutes “success” and how it is measured.

I. Develop, Implement, And Fully Fund Long-Term Strategies

Quick-fix diets and short-term approaches to countering obesity have been repeatedly shown to fail over time. On the individual level, successful obesity intervention strategies incorporate dietary and physical activity changes into daily life on a permanent and ongoing basis. This requires a lifelong, comprehensive commitment to behavioral change. On the broader, public health level, efforts must focus on the long term as well. This requires the political will to provide enough funding to adequately support the development, implementation, and ongoing evaluation of large-scale obesity intervention studies. The Chronic Disease Directors rated lack of funding and political perceptions as the key barriers to battling obesity and related health risks in a comprehensive and effective way.

The CDC is the federal agency in the U.S. government with the mission to “promote health and quality of life by preventing and controlling disease, injury, and disability.” This includes serving as the lead agency for developing a national strategy to counter obesity.

Yet the budget for its National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), where most of the agency’s obesity-related programs are managed, has been declining at the same time obesity rates have been skyrocketing.

The CCDPHP budget was \$899.6 million in FY 2005 and was cut 6.7 percent to \$838.7 million in FY 2006. The President’s FY 2007 budget proposed just \$818.7 million (a 2.3 percent cut from FY 2006 to FY 2007, or an aggregate cut of 8.9 percent over two years). The CCDPHP budget equates to approximately \$3 per person in the United States, which is less than the cost of most fast-food meals.

The budget for the Division of Nutrition and Physical Activity, which is part of the CCDPHP, was \$41.9 million in FY 2005 and \$41.5 million in FY 2006. The President’s FY 2007 budget proposed another \$41.5 million. This equates to approximately \$0.14 per person in the United States and reflects two years of back-to-back cuts.

2. Fast-Track Research To Support Public Health Strategies

Nearly half of the Chronic Disease Directors responded that they did not feel that they had adequate quality research to help them construct effective obesity-prevention and reduction strategies in their states. They felt that additional research is needed to identify evidence-based interventions and best practices guidelines for programs. Evaluations of the current body of research call for additional resources on “translational” research that helps inform and improve long-term, community-based approaches.

While the need for translational research is critical, the nation cannot wait for the outcome of this research to ramp up our efforts against obesity. The impact of obesity on the current population and the continuing rise in obesity rates, particularly among children, require the nation to take action now, based on the best evidence and practices that are currently known, while more research is conducted.

CHALLENGE TO THE RESEARCH COMMUNITY: FIVE MAJOR RESEARCH QUESTIONS

The “Strategic Plan for NIH Obesity Research” identifies the need for more “translational” research aimed at preventing and reducing obesity through lifestyle modifications. Below are five major research questions TFAH identified in the 2005 version of “F as in Fat” that are not yet “answered” by the field, but which are crucial to better informing obesity efforts.

1) How does obesity relate to people’s health and life expectancy? Despite efforts by the CDC to study obesity, morbidity, and mortality, there are still many remaining questions about how obesity impacts health, contributes to diseases, and, in some cases, leads to death.

2) What is success: Can people be fit and fat or is weight loss necessary for good health? Research should examine the interrelationship between weight and activity. There are many questions about whether inactivity or weight has a bigger impact on health. These studies should explore how incremental changes in weight impact people’s health. Additionally, there are questions about how active Americans currently are versus how active they should be to maintain good health. These research efforts should also develop model physical education programs in schools and investigate the impact of community design on activity levels.

3) What are the relationships between socioeconomic and cultural issues and obesity? This research should further examine the economics of eating healthy, including food accessibility and affordability, and racial/ethnic genetic and cultural differences. Improved understanding in these areas will lead to better intervention efforts within targeted populations.

4) What are the costs of obesity and the benefits of possible policy actions? There needs to be further research that clearly identifies the harms and costs caused by obesity and the potential health and economic benefits of anti-obesity efforts. Research should examine obesity prevention programs targeted at individuals, families, schools, communities, the food industry, employers, states, and the federal government.

5) Who is responsible for obesity reduction? Research should examine if focusing on personal responsibility is most effective or if approaches that include other factors that influence individual behavior lead to more positive results. There should also be efforts to develop better communication with the public about obesity recommendations and actions through consistent and effective messages targeted at appropriate audiences.

3. Develop A Better Way To Measure “Success” And Progress

The Chronic Disease Directors and a number of researchers have called for the development of additional measures to study obesity prevention, control, and reduction programs. Current measures often focus on weight loss, such as BMI, which is often difficult to achieve. Additional approaches

should be considered to help evaluate more incremental change, such as improved nutrition and increased physical activity. These strategies have been shown to produce health benefits for everyone, regardless of their current weight.

4. Walk The Talk: Action Needed Now

Many segments of our society have an important role to play in anti-obesity efforts. Individuals, families, communities, local governments, states, schools, employers, industry, and the federal government all have the opportunity, if not the direct responsibility, to recognize the costs and consequences of obesity—and the savings and benefits of health.

TFAH also calls for ongoing policy research to be conducted that addresses the range of obesity-related policy initiatives currently being implemented, including restrictions on competitive foods in schools, physical activity requirements in schools, health education, tax incentives or disincentives, manufacturer liability limits, healthy living programs, and smart growth initiatives. There needs to be a clear understanding about which policy or population-wide interventions are most effective in addressing obesity.

Below are 20 recommendations for reducing obesity’s health and financial costs to the nation. The recommendations are categorized by stakeholders, however, obesity should be viewed as a multidimensional issue that involves each of these decision-

maker categories: individuals and families, communities, states, schools, health professionals, employers, the food industry, and the federal government. Individual behavior change will not work in isolation. A strategic action plan should be undertaken to define what each sector can do together and how the different actions can reinforce each other for a more effective outcome.

To succeed, anti-obesity efforts must take a multi-sectoral approach, involving key decision makers from a wide variety of disciplines and perspectives both inside and outside the government. For instance, most of the Chronic Disease Directors reported that they felt they only had “some” or “a little bit” of influence on decisions relating to the built environment. Additionally, there was a mixed reaction from the Directors about the ability to collaborate on the implementation of strategies with the medical community, where considerations about financing preventive care services often become a barrier. For community-based efforts to yield greater success, more of the community must be involved in developing and implementing these strategies.



Stakeholders	Recommendation	Description
Individuals and Families: <i>Eat and Exercise for Better Health</i>	Improve Resources for Individuals	Individuals should Factor Health Concerns into their Eating and Exercise Choices. Research has found that even small changes in diet and physical activity can yield big results toward reducing people’s risk for health problems, ranging from diabetes to heart disease. Everyone should regularly engage in some form of physical activity. Individuals should also adapt eating patterns toward healthier selections and moderate their intake of foods with limited nutritional value. People should also learn about and take advantage of resources designed to help them stay healthy. If they are unsatisfied with the options they have, they should make their opinions known to their local, state, and federal government officials.
	Improve Resources for Families	People should also be Concerned About Obesity and Inactivity as Health Risks to their Family Members. By encouraging family members to make healthy choices, people may help decrease the number of health problems their loved ones face. Particularly, by helping children stay active and maintain nutritious eating habits, families may help them avoid potential life-long diseases. Families also have leverage as consumers. They should directly communicate with food, beverage, and marketing industry and use their purchasing power to encourage product development and offerings that match the interest they may have for alternative choices.
Communities and Local Governments: <i>Facilitate a Healthy Lifestyle</i>	Healthier Environments for Community and Faith-Based Organizations	Provide Opportunities for Safe and Supervised Activity for Children. Communities should develop and support organizations and facilities that allow children to participate in safe physical activity programs. Provide No- or Low-Cost Fitness Opportunities and Nutrition Counseling. Communities should support offering no- and low-cost venues for children and adults to participate in physical activity, ranging from building and maintaining parks to supporting community centers, such as YMCAs. Community groups should also provide access to no- or low-cost physical activity programs. Offer Healthy Food at Community Events. Communities should provide nutritious food at events to help people foster and maintain healthy eating habits.

Stakeholders	Recommendation	Description
<p>Communities and Local Governments:</p> <p><i>Facilitate a Healthy Lifestyle</i></p>	<p>Focus on Smarter Community Design</p>	<p>Provide Improved Access to Healthy Food in Low-Income Areas. Healthy food access is a demonstrated problem in many low-income communities. Communities should encourage the development of and provide public space for locally operated produce markets and farmers markets. Also, through the use of incentives, communities should encourage supermarkets and food shopping vendors to locate in lower-income neighborhoods and offer healthier food alternatives.</p> <p>Encourage “Mixed Use” Areas. Communities and states should examine and update zoning and land use laws to allow for more “mixed use” commercial and residential communities, so people can have more opportunities to walk or bike to retail centers and to work.</p> <p>Examine Health Impact of New Building. Communities should require “Health Impact Assessments” for proposed land use building and transportation projects, which will help communities and policymakers understand the possible resulting changes to people’s health, including access to recreational space and to food shopping. These can be based on the “Environmental Impact Assessment” model.</p> <p>Building Design Codes. Encourage new building design that includes stair-friendly and other spaces that facilitate activity in commercial and public buildings.</p> <p>Build More Sidewalks. Communities should place greater emphasis on building sidewalks, particularly in new developments and around highways, to make it possible for people to walk safely.</p> <p>Encourage Use of Transportation Funds for Mass Transit and Alternatives to Highways. Communities should insist that states and counties require alternative proposals be examined when new highway initiatives are proposed. New development also should be required to include pedestrian- and cyclist-friendly components, such as sidewalks and bike paths, which encourage interconnectivity of communities and opportunities for activity. State and federal transportation dollars should be considered for mass transit, sidewalk, and mixed use opportunities rather than be focused on highway construction.</p> <p>Modernize New School-Site Construction Requirements. States and localities should review and update old acreage requirements for new school construction. Flexible standards for school site construction would allow communities to build schools closer to existing homes and commercial regions, where students can walk or ride bikes to school, instead of in remote areas.</p>
<p>Governors, Legislators, and State Health Departments:</p> <p><i>Oversee and Implement Creative Policies</i></p>	<p>Obesity Research and Prevention Initiatives</p>	<p>Community-Wide Education Campaigns. Communities and states should create or expand initiatives to inform the public about ways to maintain better health, particularly for children and groups that are at-risk for obesity-related diseases. These efforts should include developing practical, effective, and consistent messages to help avoid confusion.</p>

Stakeholders	Recommendation	Description
<p>Governors, Legislators, and State Health Departments:</p> <p><i>Oversee and Implement Creative Policies</i></p>	<p>Employer Status and Purchasing Clout</p>	<p>State and Local Government Employee Wellness Efforts. State and local governments are employers as well as providers of governance and public service. Many governors have begun initiatives to provide workplace wellness and preventive health care services. All states should offer these programs and also should also provide these models to private businesses to expand these opportunities for private employees as well.</p> <p>Leverage Power as Food Purchaser. The public sector purchases food across a range of institutions, including in government cafeterias, schools, and prisons. The government should leverage its power as a food purchaser to require a greater emphasis on nutritional value as a priority in the bidding process for these contracts.</p> <p>Evaluate Current Snack Tax and Liability Limitation Policies. States should devote time and resources to developing evaluation standards to monitor the effectiveness of both types of controversial initiatives.</p>
<p>Schools and School Districts:</p> <p><i>Educating Healthy Minds and Bodies... Minimum Standards Are Not Good Enough</i></p>	<p>Taking Responsibility for Feeding Students Well</p>	<p>Adopt Higher Nutritional Standards Than USDA. Some states have taken the lead in setting requirements that are higher than the USDA minimum requirements for food served in school. Instead of focusing on delivering minimum nutritional standards, schools and school districts should concentrate on setting high nutritional standards all the foods and beverages served and sold on the school campus.</p> <p>Revise Food Contract Policies and Priorities to Focus on Maximum Nutrition. Contracts for school food suppliers and providers should be reviewed to focus on competing to provide maximum nutrition standards to students.</p> <p>Evaluate Alternative Fundraising Options that Do Not Involve Providing Junk Food to Students. Currently many schools, school districts, and after-school activities rely on revenue from vending machines and other food sales. Communities must be better informed that while revenue from “competitive foods” may seem like an effective fundraising mechanism, it also directly results in a reduction in federal funds to the school lunch program. Schools should prioritize finding other revenue streams to support programs.</p> <p>Evaluate and Refine BMI Initiatives. School BMI screening programs should be evaluated for effectiveness for reducing and controlling obesity. States using BMI initiatives mainly for surveillance of student health should find ways to effectively use the data to inform obesity prevention and control efforts.</p>
	<p>Fitness and Activity During the Day</p>	<p>Physical Education Should Be Incorporated into No Child Left Behind Requirements. While schools and school districts are struggling to meet academic standards with limited resources and time, physical education still needs to be considered an important part of a child’s education. Additional emphasis must also be placed on hiring, training, and retraining expertly qualified physical education teachers. Schools should also encourage other activity throughout the day and ensure that facilities and space for students provides options for walking, being active, and exercising before and after school as well as between classes.</p> <p>Improve Nutrition and Health-Promotion Education. Greater efforts should be made to educate students about ways to maintain good nutrition and exercise regimes and how this impacts their health.</p>

Stakeholders	Recommendation	Description
Employers: <i>Healthy Workers Are Productive Workers</i>	Wellness and Disease-Prevention Programs and Benefits	Offer Employees Programs and Health Benefits that Help Them Stay Healthy, including nutrition and obesity counseling, subsidized health club memberships, and insurance discounts for preventive services. Investing in the health of employees not only improves productivity but also cuts down on absenteeism.
	Healthier Work Environments	Provide Opportunities for Employees to be Active During the Day, including open, safe stairwells and other places to walk. Businesses should also focus on providing healthy options in vending machines and in cafeterias.
Industry: <i>Encourage Healthy Options, Prevention, and Informed Choice in the Marketplace</i>	Health Care Sector	Promote Prevention Efforts in the Marketplace. Offering more prevention-focused benefit options to employers could improve long-term health and make an economic difference. This should extend to providing prevention support and offering healthy food and activity capabilities to their own employees as well. Routinely Measure Patients' Exercise Histories. As part of a normal checkup, health care providers should routinely ask patients about their exercise histories and habits and counsel patients the importance of fitness for their health.
	Food, Beverage, and Marketing Industries	Encourage Healthy Options and Inform Customers. Providing customers with healthy options and additional product information and nutritional values can be both good for health and the bottom line. The food and beverage industry should provide consistent nutritional labeling to consumers, based on product size. Industry should seek the input of parents and other community members to establish standards and practices for marketing products to children.
	Federal Government: <i>Raising the Bar for Requirements and Service</i>	Overhaul the food stamp and Women, Infants, and Children (WIC) Supplemental Nutrition Programs
Medicaid System		Provide Routine Screenings for Those At Risk for Obesity-Related Illnesses. Individuals in lower-income ranges, including many who are in the Medicaid program, are at high risk for obesity and many obesity-related diseases. The current Medicaid reform efforts should mandate routine screenings for program participants along with routine nutritional and obesity counseling. Better prevention and disease-management programs will result in cost-savings to the system as a whole. Subsidize or Reimburse for Fitness Programs. Providing support for individuals receiving Medicaid to participate in exercise and fitness programs, such as those offered by the YMCA or community recreational centers, could help reduce beneficiaries risk their risk for or better manage obesity-related diseases. It also could improve the health of those who are already suffering from related diseases.
Raise Requirements on School Meal Programs		Minimum Nutrition Standards Should Be Raised. The USDA school lunch program not only influences school food offerings through requirements for the formal meal programs, but also serves as a model. The standards should be reformed to focus on providing maximum nutrition to students rather than meeting minimum nutritional standards.

Stakeholders	Recommendation	Description
Federal Government: <i>Raising the Bar for Requirements and Service</i>	Fix the Food Pyramid And Add Corresponding Physical Activity Guidelines	<p>Address Public Concerns. There were a number of public concerns that were unaddressed after the new food pyramid guidelines were released earlier this year. USDA should make every effort to respond to concerns that ranged from complaints that the spectrum of pyramids was too confusing to information only being available online to insufficient information about unhealthy foods and serving sizes.</p> <p>Add More Physical Activity Information. The new food pyramid included encouraging individuals to engage in activity for the first time. This should be expanded into providing a full-fledged set of guidelines and recommendations to the public on physical activity.</p>
	Offer and Emphasize Prevention Benefits Provided to Federal Employees	<p>As an Employer, the Federal Government Should Provide Preventive Health Services. The federal government should set an example and place a high priority on providing obesity and nutrition counseling, preventive health programs, proactive disease management benefits, and premium discounts for preventive services to federal employees.</p>
	Use Clout as Food Purchaser, Employer, and Service Provider to Veterans	<p>Government has a Critical Role as Employer Model and Purchaser. The government purchases food for a range of purposes, ranging from USDA programs to cafeteria food for employees to veterans hospitals to meals for the military. Government should serve as a by setting high nutrition standards for the food and meals it provides as well as by using its clout to influence the food industry to provide healthier choices to consumers.</p> <p>The government should also explore incentive programs for food companies to make healthier food available, especially directed to targeted populations.</p>
	Bolster Obesity Research	<p>Expand the Behavioral Risk Factor Surveillance System (BRFSS). Currently, the primary source for trends on health information, BRFSS, is limited in the scope, due to lack of funding. If the survey were expanded, including using larger sample sizes, the information would better inform policy decisions, allow for more research on trends, and provide measures and accountability for policy initiatives.</p> <p>Prioritize and Fund Key Research Initiatives. Based on the size, cost, and impact of the obesity issue, the federal government should prioritize and fully fund critical research efforts, particularly the five major research questions TFAH outlined that are holding back the ability to make better-informed and practical policies.</p> <p>Explore Economic Incentives for Promoting Good Nutrition and Exercise. The federal government should sponsor research and modeling efforts on the use of economic incentives to encourage businesses to provide more healthy options to consumers, such as examining the impact of taxes on unhealthy foods or subsidies for fruit and vegetables.</p>
	Increase Availability of Obesity Initiatives and Grants to States	<p>Expand and Fully Fund Obesity-Related Initiatives. Currently, there are insufficient funds allocated to provide grants for existing obesity programs to meet the requests of states. At a minimum, there should be enough funding to provide grants to all qualified state applicants to the CDC’s Division of Nutrition and Physical Activity (DNPA), Steps to a HealthierUS, and the Division of Adolescent and School Health (DASH) “cooperative agreement” fund programs.</p> <p>Enhance Targeted Public Education Efforts, Particularly for Children. Given the demonstrated success of CDC’s VERB public education campaign to encourage and increase physical activity in youth ages 9 to 13 and the IOM’s call for the increased use of media as a channel to reach and inform children about nutrition and exercise, additional other public education campaigns aimed at high-risk communities should be developed using consistent messages.</p>

APPENDIX A: METHODOLOGY FOR TFAH'S 2005 STATE RANKINGS

Data for this analysis were obtained from the Behavioral Risk Factor Surveillance System dataset (publicly available on the Web at cdc.gov/brfss). BRFSS is an annual cross-sectional survey designed to measure behavioral risk factors in the adult population (18 years of age or older) living in households. Data are collected from a random sample of adults (one per household) through a telephone survey. The BRFSS currently includes data from 50 states, D.C., Puerto Rico, Guam, and the Virgin Islands. The 2005 statistics were the most recent data available.

To conduct the analysis, TFAH contracted with David Eisenberg, Ph.D., Assistant Professor, and Edward N. Okeke, MBBS, Health Service Organization and Policy Doctoral Student, at the Department of Health Management and Policy of the University of Michigan School of Public Health.

To account for the complex nature of the BRFSS survey design and obtain estimates that accurately represent obesity rates at the state level, the researchers used sample weights provided by the CDC in the dataset. [Note: the use “weight” is used here as a statistical term for evaluating data and is not associated with a height or weight of people.] The main purpose of weighting is to reduce bias in population estimates by up-weighting population sub-groups that are underrepresented and down-weighting those that are overrepresented in the sample. Also, estimation of variance (which indicates precision and is used in calculating confidence intervals), needs to take into account the fact that the elements in the sample generally will not be statistically independent as a result of the multistage sampling design.

The researchers specified the sampling plan in the statistical program STATA²⁷⁰ using the `svyset` command and the following set of weights: Sample weight variable (FINALWT), first-stage stratification variable (STSTR), and primary sampling unit variable (PSU). Omission of the stratification variable in STATA implies no stratification of PSUs prior to first-stage sampling. Omission of the primary sampling unit variable implies one-stage sampling of elements and no clustering of sampled elements. Omission of the sample weight implies equally weighted sample elements. Mean proportions for each variable were estimated using the `svy: proportion` command.

Variables of interest included BMI, hypertension, and diabetes. BMI was calculated by dividing self-reported weight in kilograms by the square of self-reported height in meters. Obesity was defined as BMI greater than or equal to 30, and overweight was defined as BMI greater than or equal to 25 but less than 30. For hypertension and gestational diabetes, the researchers created a binary variable equal to one if the individual had been diagnosed as having the disease by a health professional, and equal to zero otherwise.

The researchers report 2005 values for our variables of interest as well as data combined from three years (obtained by merging data from 2003-2005).²⁷¹ The 2005 sample consisted of 354,867 observations, while the three-year sample (2003-2005) consisted of 879,126 observations.

Examples of “stabilizing” data over a three year period:

State	2003 BRFSS (percent obese)	2004 BRFSS (percent obese)	2005 BRFSS (percent obese)	“Stabilized” 2003-05 BRFSS Combined Data (percent obese)
West Virginia	27.7	27.6	30.8	28.6
Louisiana	24.8	27.0	30.8	27.4
Kentucky	25.6	25.8	28.6	26.7
South Carolina	24.5	25.1	29.1	26.2
Alaska	23.5	23.7	27.5	24.9
Nebraska	23.9	23.2	26.0	24.4
Delaware	24.0	21.1	23.5	22.8
Idaho	21.8	20.8	24.5	22.4
Oregon	21.5	21.2	23.8	22.2
Wyoming	20.1	20.8	24.2	21.7
Massachusetts	16.8	18.4	20.7	18.6

BRFSS Data Collection in States

According to information CDC provided to TFAH, each state conducts its own survey for BRFSS. States conduct interviews during each month in accordance with a standardized prescribed protocol, and enter results into computer-assisted telephone interviewing (CATI) computer files. States edit and correct completed interviews each month using an edit program provided by CDC. Data are submitted to CDC on a monthly basis, where the data undergo rigorous data quality checks. In addition, the weight and height questions have not changed since 1984, making the BRFSS data collection for obesity very consistent over time.

The system has existed since 1984, and all states have participated since 1994. Data are collected and analyzed using standardized methodology, and results are released annually.

Youth Rankings

The Youth Risk Behavior Surveillance System is similar to the BRFSS; it monitors the prevalence of youth behaviors that most influence health. The YRBSS includes national, state, and local Youth Risk Behavior Surveys (YRBS) of high school students. The data in this report are from the state and local YRBS. These surveys use a two-stage cluster sample design to produce a representative sample of ninth through 12th-grade students in each participating state. Results are not available from every state because some states do not conduct a YRBS (in 2005, California, Louisiana, Minnesota, Pennsylvania, Virginia, and Washington did not conduct a YRBS) and some states that did conduct a YRBS did not achieve a high enough overall response rate to receive weighted results (in 2005, Alaska, Illinois, Mississippi, and Oregon did not get weighted data). Further, questions asked by states may vary.

TFAH reported percentage of high school overweight and 95 percent confidence intervals as listed on CDC’s website at <<http://www.cdc.gov/healthyyouth/yrbs.index.htm>>.

TFAH used PedNSS data as a snapshot of overweight among low-income pre-school children. These data are collected at public health clinics around the country, are aggregated by the states, territorial, and tribal governments participating in PedNSS. Data are available on <http://www.cdc.gov/pednss/pednss_tables/index.htm>

APPENDIX B: BRFSS STATISTICS ARE BASED ON SELF-REPORTED SURVEY INFORMATION AND LIKELY UNDERREPORT OBESITY RATES.

A recent study found that the BRFSS underreports obesity at the state level, not just the national level.²⁷² Women were more likely to underreport their weight, while men were more likely to say they are taller than they actually are, both of which affect BMI measures. The researchers present “adjusted” 2000 BRFSS data by comparing it to the NHANES data; highlights are illustrated in the table below.

Prevalence of Obesity -- 2000 BRFSS Data and Adjusted BRFSS Data			
	Percent Obese 2000 BRFSS	Percent Obese After the Data Are Adjusted	Percentage Point Difference
Texas women	22	37	+ 15
South Carolina women	24	37	+ 13
Mississippi women	24	37	+ 13
Louisiana women	25	37	+ 12
Alabama women	25	37	+ 12
D.C. women	26	37	+ 11
Texas men	24	31	+7
Mississippi men	26	30	+4

Source: CDC Behavioral Risk Factor Surveillance System Prevalence Data and “Trends in National and State-Level Obesity in the USA After Correction for Self-Report Bias: Analysis of Health Surveys.”²⁷³

Because BRFSS self-reported data underestimates the rates of overweight and obesity, it would be ideal to expand BRFSS to actually measure a subset of respondent’s height and weight in order to provide adjusted data similar to the Harvard study.

APPENDIX C: ADULT BRFSS OBESITY DATA

State	2002-2004 3-Yr. Data Percentage (95% Conf Interval)	2003-2005 3-Yr. Data Percentage (95% Conf Interval)	Percentage Point Change 2002-2004 to 2003-2005
Alabama	27.6% (+/- 1.1)	28.7% (+/- 1.1)	1.1
Alaska	23.5% (+/- 1.4)	24.9% (+/- 1.4)	1.4
Arizona	20.3% (+/- 1.3)	20.8% (+/- 1.3)	0.5
Arkansas	25.0% (+/- 0.9)	26.4% (+/- 0.9)	1.4
California	21.6% (+/- 0.9)	22.7% (+/- 0.9)	1.1
Colorado	16.4% (+/- 0.8)	16.9% (+/- 0.7)	0.5
Connecticut	18.9% (+/- 0.7)	19.6% (+/- 0.8)	0.7
Delaware	22.5% (+/- 1.0)	22.8% (+/- 1.0)	0.3
District of Columbia	21.2% (+/- 1.4)	21.5% (+/- 1.2)	0.3
Florida	20.7% (+/- 0.9)	21.8% (+/- 0.9)	1.1
Georgia	24.5% (+/- 0.9)	25.5% (+/- 0.9)	1.0
Hawaii	16.8% (+/- 1.0)	18.2% (+/- 1.0)	N/A
Idaho	20.9% (+/- 0.8)	22.4% (+/- 0.8)	1.4
Illinois	22.9% (+/- 0.9)	23.9% (+/- 0.9)	1.0
Indiana	25.2% (+/- 0.7)	26.2% (+/- 0.8)	1.0
Iowa	23.4% (+/- 0.9)	24.3% (+/- 0.8)	0.9
Kansas	22.9% (+/- 0.7)	23.2% (+/- 0.7)	0.3
Kentucky	25.4% (+/- 1.0)	26.7% (+/- 1.0)	1.3
Louisiana	25.8% (+/- 0.8)	27.4% (+/- 0.9)	1.6
Maine	21.4% (+/- 1.0)	22.0% (+/- 1.0)	0.6
Maryland	21.7% (+/- 0.9)	23.4% (+/- 0.9)	1.7
Massachusetts	17.8% (+/- 0.7)	18.6% (+/- 0.7)	0.8
Michigan	25.3% (+/- 0.9)	25.6% (+/- 0.8)	0.3
Minnesota	22.6% (+/- 0.8)	23.1% (+/- 0.9)	0.5
Mississippi	28.1% (+/- 0.9)	29.5% (+/- 0.9)	1.3
Missouri	23.9% (+/- 1.0)	25.2% (+/- 1.0)	1.3
Montana	19.1% (+/- 0.9)	19.9% (+/- 0.9)	0.8
Nebraska	23.4% (+/- 0.8)	24.4% (+/- 0.8)	1.0
Nevada	21.2% (+/- 1.3)	21.0% (+/- 1.3)	-0.3**
New Hampshire	19.9% (+/- 0.7)	21.7% (+/- 0.8)	1.8
New Jersey	20.3% (+/- 0.8)	21.4% (+/- 0.5)	1.1
New Mexico	20.5% (+/- 0.8)	21.2% (+/- 0.8)	0.7
New York	21.2% (+/- 0.8)	21.7% (+/- 0.7)	0.5
North Carolina	23.9% (+/- 0.8)	24.7% (+/- 0.6)	0.8
North Dakota	23.9% (+/- 1.0)	24.6% (+/- 1.0)	0.7
Ohio	24.4% (+/- 1.1)	24.9% (+/- 1.1)	0.5
Oklahoma	24.0% (+/- 0.7)	25.4% (+/- 0.7)	1.4
Oregon	21.0% (+/- 0.9)	22.2% (+/- 0.7)	1.2
Pennsylvania	24.0% (+/- 0.8)	24.5% (+/- 0.8)	0.5
Rhode Island	18.6% (+/- 0.9)	19.5% (+/- 0.9)	0.9
South Carolina	25.1% (+/- 0.9)	26.2% (+/- 0.7)	1.1
South Dakota	22.6% (+/- 0.8)	24.0% (+/- 0.8)	1.4
Tennessee	25.6% (+/- 1.1)	26.6% (+/- 1.1)	1.0
Texas	25.3% (+/- 0.8)	25.8% (+/- 0.8)	0.5
Utah	19.6% (+/- 0.9)	20.8% (+/- 0.9)	1.2
Vermont	19.1% (+/- 0.7)	19.5% (+/- 0.7)	0.4
Virginia	22.8% (+/- 1.0)	23.3% (+/- 0.9)	0.5
Washington	21.7% (+/- 0.6)	22.4% (+/- 0.4)	0.7
West Virginia	27.6% (+/- 1.0)	28.6% (+/- 1.0)	1.0
Wisconsin	21.9% (+/- 0.9)	22.9% (+/- 0.9)	1.0
Wyoming	20.1% (+/- 0.8)	21.7% (+/- 0.8)	1.6

Source: CDC data. *Red denotes a statistically significant change (P<0.05) from 2002-2004 to 2003-2004.

**Nevada's decrease is not statistically significant. See methodology overview for more details.

Hawaii was excluded from year-to-year comparisons because 2004 data are not available for the state.

APPENDIX D: RESPONDENTS TO TFAH'S CHRONIC DISEASE DIRECTORS SURVEY

26 total respondents: 19 listed below, 7 chose to remain anonymous

Leslie Best

Chronic Disease Director
Pennsylvania Department of Public Health

Cynthia Boddie-Willis

Director, Division of Health Promotion and Disease Prevention
Massachusetts Department of Public Health

Dan Cillessen

Administrator, Office of Disease Prevention
Nebraska Department of Health and Human Services

Mary Frost

Policy and Integration Unit Manager
Washington Department of Health

Joseph Grandpre

Chronic Disease Section Chief
Wyoming Department of Health

Erika Kirby

Program Manager, Division of Obesity Prevention and Control
South Carolina Department of Health and Environmental Control

LeDene Larsen

Director, Bureau of Health Promotion
Utah Department of Health

Mary S. Manning

Director, Health Promotion and Chronic Disease Division
Minnesota Department of Health

Chandana Nandi

Chief, Division of Chronic Disease
Illinois Department of Public Health

Christine Parker

Program Director, Obesity Program
Connecticut Department of Public Health

Sherri Paxon

Division of Chronic Disease
North Dakota Department of Public Health

Marcus Plescia

Chief, Chronic Disease and Injury Section
North Carolina Division of Public Health

Tricia Schlechte

Interim Administrator for Section of Chronic Disease Prevention
Missouri Department of Health and Senior Services

Judy Solberg

Chief, Bureau of Nutrition and Health Promotion
Iowa Department of Public Health

Tom Tracy

Program Manager, Physical Activity and Nutrition
Idaho Department of Health and Welfare

David Vigil

Chronic Disease Director
New Mexico Department of Health

Virginia Warren

Section Manager, Chronic Disease
Arizona Division of Public Health Services

Barbara Yamashita

Division Chief, Community Health Division
Hawaii State Department of Health

Adeline Yerkes

Chief, Chronic Disease Service
Oklahoma State Department of Health

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